

- Gross, N. 2009. A pragmatist theory of social mechanisms. *American Sociological Review*, 74: 358–379.
- Hambrick, D. C., & Crozier, L. M. 1985. Stumblers and stars in the management of rapid growth. *Journal of Business Venturing*, 1: 31–45.
- Joas, H. 1993. *Pragmatism and social theory*. Chicago: University of Chicago Press.
- Peirce, C. S. 1878. How to make our ideas clear. *Popular Science Monthly*, 12: 286–302.
- Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. 2009. Marketing under uncertainty: The logic of an effectual approach. *Journal of Marketing*, 73(3): 1–18.
- Read, S., Sarasvathy, S. D., Dew, N., & Wiltbank, R. 2016. Response to Arend, Sarooghi, and Burkemper (2015): Co-creating effectual entrepreneurship research. *Academy of Management Review*, 41: 528–536.
- Sarasvathy, S. D. 1998. *How do firms come to be? Towards a theory of the prefirm*. Pittsburgh: Carnegie Mellon University.
- Sarasvathy, S. D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26: 243–263.
- Simon, H. A. 1959. Theories of decision making in economics and behavioral science. *American Economic Review*, 49: 253–283.
- Suddaby, R. 2010. Editor's comments: Construct clarity in theories of management and organization. *Academy of Management Review*, 35: 346–357.
- Weick, K. 1979. *The social psychology of organizing*. Reading, MA: Addison-Wesley.
- Weick, K. 1989. Theory construction as disciplined imagination. *Academy of Management Review*, 14: 516–531.
- Zbaracki, M. J. 1998. The rhetoric and reality of total quality management. *Administrative Science Quarterly*, 43: 602–636.

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A Process Perspective on Evaluating and Conducting Effectual Entrepreneurship Research

Effectuation has emerged as an important way to think about entrepreneurship (Sarasvathy, 2001). Arend, Sarooghi, and Burkemper's (2015;

hereafter, "ASB") recent critique of the effectuation literature raises several issues, both about building theory in organizational research and the status of effectuation as a theory of entrepreneurship. Positioning their article within ongoing discussions about effectuation research (e.g., Baron, 2009), ASB seek to make three major contributions. First, they propose a three-step theory-assessment framework to evaluate the status of all theories "in our field and others" in a "fair," "efficient," and "objective" manner (2015: 630). Second, they critically analyze the theoretical status of effectuation, concluding that "effectuation is underdeveloped as a new theory of entrepreneurship" (2015: 644). Third, they identify key directions for "improving and elaborating" effectuation (2015: 631).

Courpasson (2013: 1247) recently commented on the importance of fostering a culture of "passionate scholarship" in which researchers truly engage with crucial issues, deeply connect with personally meaningful topics, and freely share ideas they care about. It is in this spirit that we comment on ASB's inquiry into the status of effectuation as a theory of entrepreneurship. We are motivated by the failure to recognize and build on the process-theoretic roots of effectual logic in the body of knowledge accumulating around effectuation (Perry, Chandler, & Markova, 2012), as well as in ASB's critique of it. These oversights are surprising, especially in light of repeated reminders over the past thirty-plus years that process theory is one of two fundamental types of theory, the other being variance theory (Langley, 1999; McMullen & Dimov, 2013; Mohr, 1982; Van de Ven & Engleman, 2004).

Effectuation initially displayed an inclination toward process theory (Sarasvathy, 2001), but scholars predisposed to variance theory have neglected these process-theoretic origins. We discuss differences between variance- and process-theoretic approaches below and caution that by overlooking or ignoring process theory, ASB's theory-assessment framework becomes highly susceptible to erroneous inferences about effectuation's theoretical status and vulnerable to inadvertent misdirection of future scholarship on effectuation.

A CATEGORY MISTAKE

Critical evaluation of theoretical systems is crucial for knowledge to progress (Kuhn, 1970). For this reason, ASB's attempt to offer a straightforward

theory-assessment framework is commendable. Their proposed 3E framework (experience–explain–establish) stipulates a series of criteria proffered to examine the status of extant theories. ASB's framework purports to provide universal and definitive assessment criteria—"a clear standard" that can be applied to any "present" or "future" theory (2015: 630). At the heart of ASB's framework is the second "E" (explain), which is where the majority of its assessment is focused. Unfortunately, ASB's second E presumes "explained-variance-as-the-only-form-of-theory" (Chiles, 2003: 288) and ignores process-theoretic research (McMullen & Dimov, 2013).

Variance theory has long been the dominant conceptual system embraced by social scientists (including entrepreneurship scholars), but process theory has also featured prominently in scholarly contributions throughout management and organizational research generally (Langley, 1999; Langley, Smallman, Tsoukas, & Van de Ven, 2013) and entrepreneurship research specifically (Hjorth, Holt, & Steyaert, 2015; McMullen & Dimov, 2013). Variance theory addresses "what" questions to produce "know-that" knowledge; process theory explores "how" questions to generate "know-how" knowledge (Langley et al., 2013: 4; Van de Ven & Engleman, 2004: 355). Variance theory involves explanations of change in an outcome variable attributed to a set of independent variables; process theory seeks to explain the evolution of a phenomenon through temporal ordering and sequential interactions of myriad events and activities (McMullen, 2015; McMullen & Dimov, 2013).

In recent years process theory has built additional momentum, with process explanations increasingly reflected in research published in premier academic journals. In addition, process theory is gaining traction among entrepreneurship researchers, particularly those interested in context-rich, complex, and dynamic phenomena (Gartner, 2010; Moroz & Hindle, 2012; Steyaert, 2007). Yet when ASB talk about "accounting for variance" (2015: 636), "dependent variable specification" (2015: 640), and "stable system states" (2015: 640) as the kinds of qualities expected of a good theory, they clearly, and exclusively, privilege variance theory.

Because variance and process theories are rooted in fundamentally different worldviews and, hence, in fundamentally different constellations of ontological, epistemological, and methodological assumptions, ASB's assessment criteria cannot

be used to evaluate process theories (see Van de Ven & Engleman, 2004: 357). ASB seem to have fallen prey to the tendency to judge all research, regardless of the worldview adopted, by the standards of the dominant worldview, which, importantly, "does not take process seriously" (Chiles, Elias, & Li, in press). Simply put, ASB make a category mistake by evaluating effectuation in variance terms.

CONTRADICTION IN EFFECTUATION RESEARCH

The 3E framework ignores the attributes of process theory on which effectuation is based and, thus, is not well suited for evaluating effectuation research. In its original form effectuation is essentially a process theory, seeking to understand "how economic artifacts such as firms, markets, and economies come to be" (Sarasvathy, 2001: 259). Sarasvathy explicitly built on the work of process scholars such as Henry Mintzberg, James March, and Karl Weick to articulate "a rudimentary theory of effectuation processes in business" (2001: 259), focusing on "the processes involved" in creating new firms (2001: 244). Indeed, the word "process(es)" appears over ninety times in Sarasvathy's (2001) seminal article, playing a highly influential role in the initial theorizing on effectuation. More recently, Dew, Read, Sarasvathy, and Wiltbank (2009) reiterated that a key goal of effectuation research is to illuminate the processes involved in making the decisions underlying the introduction of new products and markets. With its emphasis on action, novelty, and change, effectuation is clearly characteristic of a process orientation (McMullen & Dimov, 2013), a point acknowledged by a host of scholars who have articulated effectuation's process-theoretic roots (McMullen, 2015; Moroz & Hindle, 2012; Steyaert, 2007).

ASB advise how to improve effectuation research, but their recommendations assume that variance methods are appropriate for examining what is presumably a process theory. Problematic for us here is their advice to "stop sampling on the dependent variable" (2015: 646), "model . . . influences on performance" (2015: 645), generate "falsifiable predictions" (2015: 635), conduct "tests of optimality" (2015: 645), and reduce complex processes to a small number of discrete "units" for the purpose of building theory (2015: 631). ASB are not alone in attempting to further effectuation

research using variance methods. After carefully reviewing the effectuation literature, Perry and colleagues, for example, advocated “developing consistent, observable behavioral variables” (2012: 838), identifying “effect sizes [that] are large and can be detected in relatively small samples” (2012: 848), and establishing psychometrically robust “measures of effectuation” (2012: 848). Like ASB, Perry and colleagues (2012: 857) take a “positivist perspective,” with a focus on “hypothesis testing” and “falsifiability” to develop effectuation.

Baron (2009) exhibited a similar concern about the use of a post-test-only, quasi-experimental design in a study of the decision-making logic of expert entrepreneurs. Fearing threats to internal validity, he implored effectuation researchers to pay closer attention to “what factors cause certain effects” (2009: 311) and encouraged careful matching of “two (or more) groups . . . on variables that are relevant to the key dependent measures,” as well as thoughtful use of “proxies to ‘stand-in’ for the unavailable pre-tests” (2009: 313). All of this is good advice for improving variance methods and would be helpful if effectuation were indeed a variance theory, but the advice becomes much less meaningful, perhaps even meaningless, if effectuation is a process theory.

In recent research scholars continue to use variance methods to study effectuation (e.g., Deligianni, Voudouris, & Lioukas, in press). Although Berends, Jelinek, Reyman, and Stultiëns’ work (2014) on how new product development unfolds over time in small firms represents a step toward reclaiming the process-theoretic roots of effectuation, such studies remain the exception rather than the rule in the effectuation literature. Of the eleven empirical studies Perry et al. (2012) identified as effectuation research between 1998 and 2009, five were experimental studies (post-test-only design with non-equivalent groups), five were field studies (three qualitative studies and two quantitative pieces), and one was a meta-analysis (comprising forty-eight new venture studies). Not one of these studies used process methods—that is, none collected “fine-grained [typically] qualitative data” over time as a way to understand “patterns in events” (Langley, 1999: 691–692).

Therefore, despite its process orientation, effectuation has been empirically examined almost exclusively using variance methods, possibly because they are the only methods for which most researchers receive training during their

graduate programs (Van de Ven & Engleman, 2004) and, thus, the only methods most scholars are familiar with (Chiles, Bluedorn, & Gupta, 2007). Another possible explanation for the dearth of process studies is that a strong overarching commitment to a positivistic philosophy of science drives the use of variance methods (Meyer, Gaba, & Colwell, 2005), including in the vast majority of empirical research in entrepreneurship (Jennings, Perren, & Carter, 2005). Either way, most entrepreneurship scholars, consciously or otherwise, simply privilege what they know—variance methods.

WHICH WAY FORWARD?

Recommendations such as those proposed by ASB (as well as Perry and colleagues, Baron, and others) are not without merit, but they will further entrench effectuation in a variance perspective, biasing its future growth and trajectory. Instead, we suggest that effectuation may develop more productively by examining processes and dynamics related to “how and why events play out over time” (Langley, 1999: 691). This can be done most effectively by collecting rich data that pay attention to the time and context in which the events unfold (Chiles et al., 2007).

In prior research scholars have identified that a critical impediment to developing effectuation within the process-theoretic tradition is the grounding “of effectual logic within an equilibrium-based perspective” (Moroz & Hindle, 2012: 806). Effectuation’s commitment to equilibrium mirrors most organizational theories in its fundamental assumptions about system dynamics (Meyer et al., 2005): systems persist in or tend toward equilibrium, a static state in which no unexpected change occurs, no opportunities exist or emerge, and no entrepreneurship takes place. Entrepreneurship, however, is an inherently complex, dynamic process in which entrepreneurs act in the face of uncertainty to discover and create opportunities, colliding with other entrepreneurs in the process to disrupt markets continually (Chiles, Vultee, Gupta, Greening, & Tuggle, 2010; McMullen & Shepherd, 2006). Such processes “do not necessarily mature toward stability and equilibrium” (Greenwood & Suddaby, 2006: 42) but, instead, exhibit both “increasing” and “punctuated” disequilibrium (Chiles, Meyer, & Hench, 2004: 510, 514), while existing “far from equilibrium” in a

state of “perpetual disequilibrium” (Meyer et al., 2005: 456–457).

Nonequilibrium phenomena, such as those described above, are better studied using disequilibrating perspectives (Arend & Chen, 2012; Chiles et al., 2010), such as the radical subjectivist version of Austrian economics (Chiles et al., 2007; McMullen, 2015) and the dissipative structures strand of complexity theory (Chiles et al., 2004; Lichtenstein, 2011). Moreover, unlike variance methods, which “are steeped in the positivistic assumptions that go hand-in-hand with the mechanistic metaphor of market equilibrium” (Chiles et al., 2010: 152) and which “can only lead to accounts of stable organizations in static environments” (Meyer et al., 2005: 470), process methods are required to “capture the salient features of events that ‘unfold over time,’ such as disequilibrium market processes” (Chiles et al., 2010: 152).

Thus, effectuation scholars may want to rethink their affiliation with equilibrium, which relies on variance theory and methods, and embrace the many disequilibrating aspects of entrepreneurship, which are better suited to process theory and research. Furthermore, in light of the “dynamic, complex, disequilibrating” nature of entrepreneurial phenomena (Arend & Chen, 2012: 85), we question whether it is appropriate for ASB to assume the kind of stable states associated with equilibrium, as they do in developing their 3E framework.

CONCLUDING THOUGHTS

Effectuation has attracted considerable attention among scholars, in part because it promises to illuminate the process dynamics by which economic artifacts (e.g., products, organizations, markets) emerge. Because entrepreneurship scholars have put much of their collective energy into “study[ing] the emergence of new organizations” (Lichtenstein, 2011: 471) and take “process [as their] fundamental object of enquiry” (McMullen & Dimov, 2013: 1505), the attraction has been particularly strong for them. ASB contribute to the ongoing discussion about the usefulness of effectuation by offering an insightful theory-assessment framework that seeks to identify the strengths and weaknesses of the growing effectuation literature. Their critique, however, ignores process theory and research and, as a result, fails to properly evaluate effectuation as

a theoretical system, while neglecting to identify many of the future directions researchers could pursue to develop effectual logic further.

For effectuation to realize its full potential, it needs to embrace process theory and research. Doing so, we believe, will allow effectuation to deliver on its original promise of exploring events, decisions, actions, context, and change. But more important, we hope that the act of taking a process perspective when evaluating inherently process-based theories and when conducting research on decidedly processual phenomena will encourage scholars in both entrepreneurship and management more broadly to appreciate and recognize the value that different styles of theory and research have to offer their respective fields. Only then is effectuation likely to be fully effectual.

REFERENCES

- Arend, R. J., & Chen, Y. 2012. Entrepreneurship as dynamic, complex, disequilibrating: A focus that benefits strategic organization. *Strategic Organization*, 10: 85–95.
- Arend, R. J., Sarooghi, H., & Burkemper, A. 2015. Effectuation as ineffectual? Applying the 3E theory-assessment framework to a proposed new theory of entrepreneurship. *Academy of Management Review*, 40: 630–651.
- Baron, R. A. 2009. Effectual versus predictive logics in entrepreneurial decision making: Differences between experts and novices: Does experience in starting new ventures change the way entrepreneurs think? Perhaps, but for now, “caution” is essential. *Journal of Business Venturing*, 24: 310–315.
- Berends, H., Jelinek, M., Reyman, I., & Stultiens, R. 2014. Product innovation processes in small firms: Combining entrepreneurial effectuation and managerial causation. *Journal of Product Innovation Management*, 31: 616–635.
- Chiles, T. H. 2003. Process theorizing: Too important to ignore in a kaleidic world. *Academy of Management Learning & Education*, 2: 288–291.
- Chiles, T. H., Bluedorn, A. C., & Gupta, V. K. 2007. Beyond creative destruction and entrepreneurial discovery: A radical Austrian approach to entrepreneurship. *Organization Studies*, 28: 467–493.
- Chiles, T. H., Elias, S. R. S. T. A., & Li, Q. In press. Entrepreneurship as process. In A. Langley & H. Tsoukas (Eds.), *The Sage handbook of process organization studies*. London: Sage.
- Chiles, T. H., Meyer, A. D., & Hench, T. J. 2004. Organizational emergence: The origin and transformation of Branson, Missouri’s musical theaters. *Organization Science*, 15: 499–519.
- Chiles, T. H., Vultee, D. M., Gupta, V. K., Greening, D. W., & Tuggle, C. S. 2010. The philosophical foundations of a radical Austrian approach to entrepreneurship. *Journal of Management Inquiry*, 19: 138–164.

- Courpasson, D. 2013. On the erosion of "passionate scholarship." *Organization Studies*, 34: 1243–1249.
- Deligianni, I., Voudouris, I., & Lioukas, S. In press. Do effectuation processes shape the relationship between product diversification and performance in new ventures? *Entrepreneurship Theory and Practice*.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. 2009. Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing*, 24: 287–309.
- Gartner, W. B. 2010. A new path to the waterfall: A narrative on a use of entrepreneurial narrative. *International Small Business Journal*, 28: 6–19.
- Greenwood, R., & Suddaby, R. 2006. Institutional entrepreneurship in mature fields: The Big Five accounting firms. *Academy of Management Journal*, 49: 27–48.
- Hjorth, D., Holt, R., & Steyaert, C. 2015. Entrepreneurship and process studies. *International Small Business Journal*, 33: 599–611.
- Jennings, P. L., Perren, L., & Carter, S. 2005. Guest editors' introduction: Alternative perspectives on entrepreneurship research. *Entrepreneurship Theory and Practice*, 29: 145–152.
- Kuhn, T. S. 1970. *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Langley, A. 1999. Strategies for theorizing from process data. *Academy of Management Review*, 24: 691–710.
- Langley, A., Smallman, C., Tsoukas, H., & Van de Ven, A. 2013. Process studies of change in organization and management: Unveiling temporality, activity, and flow. *Academy of Management Journal*, 56: 1–13.
- Lichtenstein, B. B. 2011. Complexity science contributions to the field of entrepreneurship. In P. Allen, S. Maguire, & B. McKelvey (Eds.), *The Sage handbook of complexity and management*: 471–493. London: Sage.
- McMullen, J. S. 2015. Entrepreneurial judgment as empathic accuracy: A sequential decision-making approach to entrepreneurial action. *Journal of Institutional Economics*, 11: 651–681.
- McMullen, J. S., & Dimov, D. 2013. Time and the entrepreneurial journey: The problems and promise of studying entrepreneurship as a process. *Journal of Management Studies*, 50: 1481–1512.
- McMullen, J. S., & Shepherd, D. A. 2006. Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review*, 31: 152–182.
- Meyer, A. D., Gaba, V., & Colwell, K. A. 2005. Organizing far from equilibrium: Nonlinear change in organizational fields. *Organization Science*, 16: 456–473.
- Mohr, L. B. 1982. *Explaining organizational behavior*. San Francisco: Jossey-Bass.
- Moroz, P. W., & Hindle, K. 2012. Entrepreneurship as a process: Toward harmonizing multiple perspectives. *Entrepreneurship Theory and Practice*, 36: 781–818.
- Perry, J. T., Chandler, G. N., & Markova, G. 2012. Entrepreneurial effectuation: A review and suggestions for future research. *Entrepreneurship Theory and Practice*, 36: 837–861.
- Sarasvathy, S. D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26: 243–263.
- Steyaert, C. 2007. "Entrepreneurship" as a conceptual attractor? A review of process theories in 20 years of entrepreneurship studies. *Entrepreneurship and Regional Development*, 19: 453–477.
- Van de Ven, A. H., & Engleman, R. M. 2004. Event- and outcome-driven explanations of entrepreneurship. *Journal of Business Venturing*, 19: 343–358.

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Theory Evaluation, Entrepreneurial Processes, and Performativity

Management scholars have long debated the definition and evaluation of theory. Recently, Arend, Sarooghi, and Burkemper (2015) proposed the 3E theory-assessment framework based on positivist, normal science ontology and epistemology (Burrell & Morgan, 1979; Kuhn, 1970). The framework considers the extent to which a proposed theory (a) is based on *experience* (builds on existing literature and valid observation), (b) can *explain* (is comprehensive and parsimonious; has clear laws of interaction, specified boundaries, stable system states, and properly formulated propositions; has an explicit causal logic), and (c) has been *established* (is empirically testable and diffused in the literature; see Arend et al., Table 1).

Using this framework to assess effectuation (Sarasvathy, 2001, 2008), Arend et al. note, "The process [of effectuation] begins when an entrepreneur confronts the uncertain and resource-restricted context and decides whether to engage in the effectual process; if the entrepreneur engages, the

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