

**RESPONSE TO AREND ET AL:
CO-CREATING EFFECTUAL ENTREPRENEURSHIP RESEARCH**

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RESPONSE TO AREND ET AL: CO-CREATING EFFECTUAL ENTREPRENEURSHIP RESEARCH

The growing conversation around effectuation has been so immersive that we have barely noticed the passing of 15 years since the introduction of the theory in this very journal. The current critique by Arend et al. (2015, henceforth ASB) invites reflection on this conversation. We begin our dialog with five points of direct response to ASB. We then draw on those to advance exchange and future research possibilities for a yet broader community of scholars who will co-create the future of effectual entrepreneurship research.

STRAW MAN AT SEA: POSITIVIST CRITIQUE OF A PRAGMATIST THEORY

At the conceptual heart of ASB's evaluation of effectuation research are positivist notions of falsifiability and theory-testing that assume a world with stable states *within which* human action occurs. This assumption is fundamentally different from that of effectuation logic that takes a pragmatist stance of seeing the world as *in-the-making* and therefore *makeable* through human action.

This conceptual mismatch manifests in five important ways in the ASB exposition. First, it encourages ASB to adopt a positivist framework (3E) to assess (pragmatist) effectuation. Second, it guides ASB to create six assumptions (pages 640-642) that are either not assumptions at all (#2 non predictive control; #3 means driven action; and #4 affordable loss) or are simply false (#1 unjustified optimism in the abilities of the entrepreneur; #5 value creation; #6 artifact success)ⁱ. Third, it results in a misconstrual of effectual process logic (Sarasvathy & Dew 2005) bearing additional non-effectual assumptions (e.g. resource limitations) as well as non-effectual paths (e.g. contingency) and states (e.g. do not enter) (presented in ASB Figure 1, p632). Fourth, it guides ASB to only a narrow slice of the published effectuation research. To assess the

completeness of ASB’s literature review, we performed our own search of Proquest, JStor and Google Scholar on the keyword of effectuation and conducted forward citation lookups on every unique work researching effectuation. We identified 287 individual pieces of literature.

Employing ASB’s 12-point criteria, and sorting for relevance and parsimony, we selected 85 additional works not cited by ASB that speak (sometimes partially and other times fully) to their criteria and critique. To illustrate the volume of literature our search revealed, set the stage for research suggestions and aid fellow scholars, we present in Table 1 an update to the ASB literature review, organized along the lines of three of ASB’s most prevalent critique points.

Insert Table 1 about here

Omitting 77% of relevant published effectuation literature (ASB cite 26 effectuation worksⁱⁱ) generates the fifth issue. Beyond raising criticisms already tackled in the literature, ASB call for future research that is currently available (e.g. inductive research) and miss promising areas for advancing the field (see next two sections). Overall, the issues resulting from ASB’s use of a positivist frame to critique a pragmatist theory become embodied in a straw man of effectuation. And we concur with ASB - that straw man is indeed ineffectual.

RISING TIDE: MOVING BEYOND THE POSITIVIST WORLDVIEW

Evident in the publications in effectuation research not cited by ASB (please see Table 1 for a partial inventory) is a rising tide that seeks to lift the field of entrepreneurship beyond the positivist perspective. Put differently, perhaps the really interesting segue ASB offer future research may be the following question: What if the lessons entrepreneurship teaches point to a worldview where (a) our prior assumptions about human characteristics are unnecessary (such as the efficacy of certain special abilities or personality traits for successful entrepreneurship) and

(b) our stance about the world and the future as being outside our control is mostly wrong? Note that we are not saying that an effectual worldview is correct for all people (including expert entrepreneurs) at all times. Only that immersive and high performing experience in entrepreneurship may lead one to believe in a different worldview where ALL people can co-create successful ventures with nothing more than resources already within their control and stakeholders who self-select into the process. Moreover, the issue at stake here is not simply whether people do or should believe in this worldview, although those are perfectly valid and important issues, but about the problem space in general. Conceptually, effectuation is most useful where traditional notions of optimality and bias break down or simply do not apply. These are spaces carefully described by scholars such as Frank Knight (1921), Nelson Goodman (1983), Richard Rorty (1989) and Hans Joas (1996); scholars who have largely been ignored by social scientists because they are difficult to incorporate into models shaped by an allegiance to predictability and optimality. And it is precisely by embracing these challenging situations that effectuation offers new insights to the theory and practice of both entrepreneurship and management.

Therefore the issue of importance here can be stated in the form of a pragmatist critique of effectuation as follows: *What difference does it make if people act as though they believe in an effectual worldview?* What difference might it make for entrepreneurship scholarship, pedagogy and practice? The central difference between a positivist critique (Is effectuation true?) and a pragmatist one (Is effectuation useful?) boils down to the effort to uncover and delineate details of how, when, where and to whom effectuation makes a difference, some of which we explore in the next section.

TIDE AT THE FLOODⁱⁱⁱ: OPEN QUESTIONS FOR FUTURE RESEARCH

Even though effectuation has been elaborated theoretically to connect with canonical theoretical models such as the New Uppsala model in international business (Schweizer, Vahlne & Johanson 2010) and empirically tested using rigorous metrics such as in Brettel et al, (2012), scholarly work on effectuation is as yet incomplete, inconsistent in places and probably far from obvious in application. And though this claim is likely applicable to most management theories, we agree with ASB's contention that critical reflection can point to productive empirical research opportunities and ultimately to better theory. Based on our work in effectuation combined with the comprehensive review we conducted for this dialog, we highlight seven areas where we believe effectuation would benefit from additional attention (underlined terms refer to entries in Table 1).

1. Clarifying the concept of effectual control: Currently, we seem to be confounding control as strategy with control as outcome. For example, effectuation consists in strategies that leverage elements within the control of entrepreneurs and their stakeholders to co-create the future, thereby allowing them to eventually achieve control over outcomes. Contrast that with prediction as strategy where the emphasis is exclusively on acting against anticipated future outcomes even if that requires entrepreneurs to pursue resources currently outside their control (Stevenson & Jarillo, 1990). Piecing apart these two aspects of control within effectuation can be done using well-developed theories from psychology such as learned helplessness (Peterson & Seligman, 1993) and learned optimism (Seligman, 2011), and can open up fertile avenues for future research.

2. Specifying the unit of deliberate practice in developing entrepreneurial expertise: The literature on expertise in cognitive science has clearly identified the role of deliberate practice as the mechanism through which expertise is acquired. But as Baron (2009) argued, no clear unit or

mechanism for the acquisition of effectual expertise in entrepreneurship has yet been identified. We believe identifying one or more such mechanisms would be useful to strengthen effectuation theory as a subset of expertise studies in cognitive science.

3. Transitioning from effectual to causal approaches and vice versa: Sarasvathy (1998, 2008) highlighted that "63% of the [expert] subjects used effectuation more than 75% of the time", and the rest of the time, experts used alternative approaches such as causation and Bayesianism. Effectuation research needs to spell out in more detail (a) the conditions under which alternate approaches may be necessary as well as (b) useful ways to mix and match predictive and non-predictive strategies and heuristics, in corporate effectuation, for example.

4. Understanding goal hierarchy and pre-commitment: With all due respect to ASB, effectuation is not a theory of "trial and error". The effectual process is purposeful, enables experiential learning and is propelled through high level goals that get shaped and embodied into workable business models and opportunities through pre-commitments from self-selected stakeholders (Sarasvathy & Dew, 2005). This suggests potential research projects connecting effectuation with literatures on goal setting (Locke & Latham, 1990), planning (Lachmann, 1976) and negotiations (Bazerman, Curhan, Moore, & Valley, 2000).

5. Endogenizing selection mechanisms: Since self-selected stakeholders in the effectual process can substitute for an exogenous market as the primary selection mechanism, links need to be forged with literatures that speak to the interconnectedness of variation and selection in evolution (Henderson & Stern, 2004). One important and growing stream of evolutionary theorizing that speaks to this is exaptation (Andriani & Carignani, 2014; Andriani & Cohen, 2013), which can bridge effectuation not only to endogenous selection but also with niche construction and the literature on technological innovation more broadly.

6. Delineating means and resources: Given the emphasis in the management literature on the benefits of resources (Barney, 1991; Barney, 2001; Wernerfelt, 1984), spelling out what counts as means in effectuation, what it takes to transform means into resources, and to what extent resources are a constraint on or an enabler of opportunities are all important issues worth investigating at the nexus of entrepreneurship and management (Corbett & Katz, 2013).

7. Exploring equity and co-creation: Partnerships are central to effectual logic, and equity, one of the key enablers of co-creative relationships is ripe for new conceptualization (Breugst, Patzelt, & Rathgeber, 2015). To date, almost all our knowledge about the role of equity comes from finance, particularly finance in large corporations that are publicly traded in stock markets. But equity relationships in new ventures span issues from emotional and psychological ownership to contractual negotiations for compensation and decision rights that impact whether and what rewards may be co-created and how they might be shared among equity holders. Whereas co-creative equity relationships may be important for the structure and performance of new ventures, they are currently a black box in entrepreneurship research. We are convinced that shining new light into this black box may open up avenues of research ranging from social psychology to finance and even macro-economics and public policy, especially given that the latter are only recently beginning to awaken to effectual entrepreneurship (Klein, Mahoney, McGahan, & Pitelis, 2010; Whittaker, 2009) and the importance of early stage equity relationships in kick-starting new ventures.

IN SUM

We have made our best attempt to write this dialogue in the effectual spirit^{iv}. To present it in a way that recognizes the effort and attention of all the self-selected stakeholders, ASB expressly and gratefully included, who have chosen to commit their precious means to the

uncertain and hopefully valuable task of advancing effectuation. And to present it in a way that encourages our fellow scholars to continue to co-create research capable of tackling futures made, as well as found.

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TABLE 1
Update to ASB Effectuation Literature Review

ASB Criticism	Relevant effectuation literature <u>not cited by ASB</u> that addresses criticism and offers useful starting points for future research
Not built on or connecting with existing literature	<p>Numerous links have been established between effectuation and central topics in management and entrepreneurship. Below is a list of topic keywords extracted from ASB and citations to published articles relating effectuation to each of those topics. For a complete list of the references in this table, please contact the authors.</p> <p>Bayesianism: (Sarasvathy & Dew 2005; Archer, Baker & Mauer 2009; Grégoire et al 2006)</p> <p>Bricolage: (Baker, Miner & Eesley 2003; Di Domenico, Haugh & Tracey 2010; Archer, Baker & Mauer 2009; Desa 2012; Mauer 2014)</p> <p>Co-Creation & Service Dominant Logic: (Read & Sarasvathy 2012; Edelman & Yli-Renko 2010; Bettencourt, Lusch & Vargo 2014)</p> <p>Creation: (Alvarez & Barney 2007; Corner & Ho 2010; Mainela & Puhakka 2009; Kleinaltenkamp et al 2012; Alvarez, Young & Woolley 2015)</p> <p>Entrepreneurship: Effectuation is covered in just about every current review of the entrepreneurship literature (recent examples include: Hills & Hultman 2013; Busenitz et al 2014; McDougall-Covin, Jones & Serapio 2014; Burg & Romme 2014; Wang & Chugh 2014)</p> <p>Experimentation: (Chesbrough 2010; Holloway & Sebastiao 2010; Nelson 2012; Mthanti & Urban 2014; Andries, Debackere & Looy 2013)</p> <p>Improvisation: (Baker, Miner & Eesley 2003; Leung et al 2006; Di Domenico, Haugh & Tracey 2010; Evers & O’Gorman 2011)</p> <p>Innovator’s Dilemma & Technology Innovation: (Chesbrough 2010; Sharma & Salvato 2011; Sandström, Berglund & Magnusson 2014)</p> <p>Institutional Theory: (Pacheco et al 2010; Dacin, Dacin & Tracey 2011; Harms & Schiele 2012; Dorado & Ventresca 2013)</p> <p>Opportunity: (Dimov 2007 & 2011; Corbett 2007; Mainela & Puhakka 2009; Autio, Dahlander & Frederiksen 2013)</p> <p>Population Ecology & Selection Mechanisms: (Breslin 2008; Brush, Manolova & Edelman 2008; Sarasvathy, Menon & Kuechle 2013)</p> <p>Resource –Based View: (Sirmon & Hitt 2003; Alvarez & Braney 2007; Sarasvathy et al 2010; Kraaijenbrink, Spender & Groen 2010)</p> <p>Real Options: (Sarasvathy & Venkataraman 2001; Garud, Kumaraswamy & Karnøe 2010; Dew et al 2009)</p> <p>Rivals and substitutes: (Dew & Sarasvathy 2005; Schweizer, Vahlne & Johanson 2010)</p>
Sparseness of empirical observation	<p>Effectuation has seen empirical tests using methods that include survey, qualitative in-depth case analysis, meta-analysis, and experiment. Below is a list of 28 empirical studies, not cited by ASB, with the N of the sample and a brief description of the empirics.</p>

N = 352 (Berends et al 2014) event histories in product innovation
 N = 219 (Blauth, Mauer & Brettel 2014) product development employees
 N = 33 (Chetty et al 2014) longitudinal cross-country case study
 N = 18 (Chu & Luke 2012) micro enterprise programs in Vietnam
 N = 4 (Dutta & Thornhill 2014) longitudinal entrepreneur case studies
 N = 64 (Dew et al 2011) contrast experts and novices
 N = 93 (Engel et al 2014) randomized experiment on business students
 N = 3 (Evald & Senderovitz 2013) in depth case studies on SMEs
 N = 7 (Faiez et al 2012) entrepreneurial networks
 N = 10/47 (Fiet, Norton & Clouse 2013) creators (10) of successful ventures (47)
 N = 4 (Gabrielsson & Gabrielsson 2013) case studies of growth ventures
 N = 2 (Harmeling & Sarasvathy 2013) in depth venture histories
 N = 65 (Harms & Schiele 2012) new venture “gazelles”
 N = 12 (Hulsink & Koek 2014) entrepreneurs under the age of 25
 N = 5 (Kalinic, Sarasvathy & Forza 2014) cases of manufacturing SMEs
 N = 2 (Kaufmann 2013) countries, comparison of technology strategy
 N = 15 (Liu & Isaak 2011) Chinese entrepreneurs & government officials
 N = 9 (Mainela & Puhakka 2009) international joint venture managers
 N = 30 (Maine, Soh & Dos Santos 2013) scientist entrepreneur decisions
 N = 9 (Mort, Weerawardena & Liesch 2012) cases on born globals
 N = 421 (Mthanti & Urban 2014) high technology firms
 N = 60 (Murnieks et al 2011) venture capitalists
 N = 9 (Reyman et al 2015) high tech firm cases used for inductive study
 N = 3 (Nummela et al 2014) startups in three different countries
 N = 4 (Schirmer 2013) in depth social entrepreneur case studies
 N = 1 (Sitoh, Pan & Yu 2014) case study of game console project
 N = 8 (Watson 2013) respondents in an ethnographic study
 N = 421 (Werhahn et al 2015) German firms used to build (N = 163) and test (N = 258) effectual orientation scale

Lack of adoption by practitioners and educators

A number of books and major practical articles on effectuation, or building on effectuation have appeared in the last five years, including:

Front cover featured article in Inc Magazine

- “How Great Entrepreneurs Think” (Buchanan 2011)

Books:

- “Corporate Effectuation: What managers should learn from entrepreneurs” (Blekman 2011)
 - “Just Start: Take Action, Embrace Uncertainty, Create the Future” (Schlesinger 2013)
 - “Effectuation” (Faschingbauer 2013)
 - “Little Bets” (Sims 2013)
 - “Decisive” (Heath & Heath 2013)
-

Gold medal winning textbook “Effectual Entrepreneurship” (Read et al 2010) has:

- Translations into 5 languages
- > 10,000 copies sold
- > 350 adoption at universities around the world
- > 3,500 downloads of free audiobook version from effectuation.org

Effectuation.org website summary statistics:

- One of the top 750,000 most popular websites in the world (alexa.com)
- > 75 teaching instruments
- > 1,000 registered entrepreneurship instructors

Recent academic literature on entrepreneurship education has pointed to the need for effectuation in business schools - as related to:

- Design thinking (Glen, Suciu & Baughn 2014)
 - Experiential learning (Bliemel 2013)
 - Personalized learning (Middleton & Donnellon 2014)
 - Public policy implications (O’Conner 2013)
 - Teachability (Bureau & Fendt 2012)
-

Footnotes

ⁱ For example, Sarasvathy (2001), published in this very journal, refuted #6 in Proposition 1 which stated that effectuation is not likely to reduce the probability of failure, but is likely to reduce the costs and time to failure (2001: 260). That same article also explicitly refuted #1, averring that no assumptions about a priori personality traits are necessary for effectuation theory. In fact, the following quote was used to make the case about optimism in particular: *Both optimists and pessimists contribute to successful inventions. The optimist invents the airplane; the pessimist the parachute* (2001: 258). This is just one example – a detailed discussion of our claims with regard to each of the 6 assumptions is available on request from the authors.

ⁱⁱ Our comparison includes both cites in the published ASB manuscript *and* cites in the ASB unpublished Table 2B, referred to in Footnote 8 of the ASB manuscript. The entire list of citations organized using ASB’s 12 criteria is available on request from the authors.

ⁱⁱⁱ Refers to Shakespeare’s “There is a tide in the affairs of men, taken at the flood, leads on to fortune...” (Julius Caesar Act 4, scene 3)

^{iv} We appreciate the feedback of Professors Ragins and Cornelisson, editors who both encouraged this spirit in our exposition, and embodied it in their valuable comments and input.