

**This is an electronic reprint of the original article.  
This reprint *may differ* from the original in pagination and typographic detail.**

**Author(s):** Häkkinen, Reija

**Title:** Effectuating Person-Organization Fit : Effectuation in Organizations

**Year:** 2015

**Version:**

**Please cite the original version:**

Häkkinen, R. (2015). Effectuating Person-Organization Fit : Effectuation in Organizations. *Journal of Entrepreneurial and Organizational Diversity*, 4(2), 1-26.  
<https://doi.org/10.5947/jeod.2015.009>

All material supplied via JYX is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

15 December 2015 | Volume 4, Issue 2 (2015) 1-21

## AUTHOR

**REIJA A. HÄKKINEN**School of Business and Economics  
University of Jyväskylä  
reija.a.hakkinen@jyu.fi

# Effectuating Person-Organization Fit - Effectuation in Organizations

## ABSTRACT

Industrial policies of innovation concentrate on funding or encouraging promising innovations entailing growth or that have possibilities of internationalization. However, concrete innovation process happens in and between individuals. Effectuation is a logic that is emergent and iterative in nature. It develops through enactment and trial-and-error processes that follow deep expertise, contextual experience and abilities to leverage contingencies. Harnessing individuals to challenge their working environment to function better may improve both work well-being and organization performance. The integration of person-organization fit and effectuation suggest that paying attention to effectuation and encouraging it in organizations may beneficially affect individual and group-level identity formation and enactment in organizations. This paper contributes in finding the linkage between core topics in the organizational psychology: person-organization fit, innovative endeavors, and effectuation.

## KEY-WORDS

EFFECTUATION; EMPLOYEE; ENACTMENT; ENTREPRENEURSHIP; ORGANIZATION; PERSON ORGANIZATION FIT

**Acknowledgments**

I thank Tarja Niemelä, Tanja Leppäaho, Saras Sarasvathy, Matthew Wuethrich, the editor Silvia Sacchetti, and the anonymous reviewers for their invaluable comments on earlier versions of this manuscript. An early version of the paper was also discussed in the Effectuation Conference held in Lyon, France in 2012.

**JEL Classification:** L26; D23, D81; J24; D83 | **DOI:** <http://dx.doi.org/10.5947/jeod.2015.009>

## 1. Introduction

The industrial policies for innovation in general are designed to help firms to innovate and commercialize their innovations. Investments in the innovative process or intangible help offered in commercializing the research or otherwise promising innovations is supposed to encourage ventures into growth and internationalization. Audretsch and Aldridge (2014) as well as Forge et al. (2013) among others bring up the importance of human capital and the flow of knowledge in innovation. Entrepreneurs and skilled, highly qualified, ambitious and educated employees and researchers are perceived to be the main innovators (Forge et al., 2013). Merely skilled individuals are not enough to create competitive advantage, it also asks entrepreneurial behavior at least from the management to orchestrate these skills (Teece, 2007). Although public policies may delineate the aims and practicalities in the policy level, finally it all comes down to the ventures themselves, and their unique practicalities. Innovation is produced by individuals, whose well-being and innovation potential is affected by group dynamics and interaction.

Organizations conduct human resource management (HRM) practices in order to create and maintain their competitive advantage. Managing the resources may help organizations to lower the costs and to differentiate products and services (Porter, 1985). Research considering HRM practices in entrepreneurial firms is scarce and as Leung et al. (2006) mention, literature is relatively underdeveloped. An employee as the most important asset of an organization has been a slightly overlooked perspective in entrepreneurship research. In other words, as Carrier (1996: 18) puts it: “It tends to be taken for granted that creative, entrepreneurial people can and will exercise their talents only within their own firms”.

Organizational values are central for person-organization fit (PO fit)<sup>1</sup> (Bourne and Jenkins, 2013). The difficulty in values is that they reflect as well individual cognitive structures as collective social structures. As there is a possibility that these values are integrated, there can also be unbalance and gaps between the values. There also seems to be gaps in explaining how this congruence can be incrementally fostered, and if totally absent, created. For example, perceived fit has not been widely researched although it relates to job satisfaction and organizational commitment (Kristof-Brown and Billsberry, 2013). It could also be useful to know how the fit actually develops (Johnson et al., 2013). Effectuation has been considered as a form of entrepreneurial behavior, and it has been detected in expert entrepreneurs (e.g. Sarasvathy, 2001; 2008). It has been found to be especially functional in the face of uncertainty and scarce resources.

Effectuation is a dynamic logic that is generally explained by four principles and the control vs. prediction worldview. Effectuation starts from: (i) individual means and continues to explain

---

<sup>1</sup> PO fit literature concentrates on explaining how organizations aim at congruence in values between the person and the organization (e.g. Bolander and Sandberg, 2013) or how individuals choose organizations they feel share their values (e.g. Hodgson, 2007)

how he or she strives towards making an effect using the means (Means, Bird-In-Hand Principle); by (ii) planning the actions in small steps and low risk (Affordable Loss Principle); with (iii) partners who are willing and able to put their effort for the common purpose (Partnerships, Crazy Quilt Principle); (iv) taking advantage of the surprises (Leveraging Contingencies, the Lemonade Principle). Effectuation has rarely been researched in the context of an organization (Wiltbank et al., 2006; Da Costa and Brettel, 2011; Brettel et al., 2012; Johansson and McKelvie, 2012).

This research considers what an employee does in order to enact customer-friendly changes in the organization—the changes that could lead the organization to reach new markets or to develop new products. Therefore, this theoretical paper aims at addressing *how effectuation appears in employees of the organizations* and *how it could be allowed and fostered in a causal organization*. Effectuation has possibilities to enlighten the complexities between person, organization and innovative endeavors because as well as it is a theory, it is as well “an internally consistent set of ideas that forms a clear basis for action upon the world” (Sarvasathy et al., 2008: 345), as also a logic of design (Dew et al., 2008).

The paper has four parts. First, the service organizations as the context and the role of entrepreneurial behavior and effectuation are considered. Second, the theories of effectuation and PO fit are introduced. Third, a framework is created considering what issues could be addressed in effectuating the fit between the person and the organization, and fourth, research suggestions for the future are considered.

## 2. Person-Organization fit

Kristof (1996: 4), one among the first PO fit researchers, defines PO fit as occurring when: “(a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both”. Fit is both complementary and supplementary congruence (Verquer, Beehr and Wagner, 2003). The former means that the organization and individual fulfill the needs of the other or, according to Muchinsky and Monahan (1987: 268), “the match between an individual’s talents and the corresponding needs of the environment”. The latter is about similar characteristics between the organization and the individual, or “the match between an individual and a group of people” (Muchinsky and Monahan, 1987: 268). According to Kristof-Brown, Zimmerman and Johnson (2005: 285), PO fit “addresses the compatibility between people and entire organizations”; while Guan et al. (2011: 286) define PO fit as “the congruence of values between a person and the organization where he/she works”. Piasentin and Chapman (2007) argue that the research has mostly concentrated on assessing the similarity between personal and organizational characteristics instead of how individuals experience the fit. Kristof (1996), Cable and Edwards (2004) and Humphrey et al. (2007; 2011) mention that even though complementary and supplementary fit

are usually researched separately, they probably operate simultaneously.

Piasentin and Chapman (2006) introduce four views of fit:

- i. supplementary fit (individual characteristics match with existing organizational characteristics);
- ii. complementary fit (an individual fulfills a void or adds something missing to the organization);
- iii. needs-supplies fit (an individual's needs are fulfilled by an organization); and
- iv. demands-abilities fit (when an individual's abilities meet the demands of the organization).

Kristof (1996) holds perceived fit more related with recent experiences and actual fit more as a long-term variable. Organizational changes may also affect perceived fit in particular, while actual fit takes more time to become visible after the change. Actual fit may improve the process outcomes as communication, group functioning, and work coordination, even if individuals do not perceive the fit (Kristof, 1996). The perceived fit between individual and organizational values may affect worker's health, work ability and quality of life as well as eventually organizational outcomes.

### *2.1 Recent findings in fit research*

Kristof-Brown and Billsberry (2013) differentiate two dominant directions in the PO fit research as: (a) perceived fit as an internal feeling; or (b) "as the interplay or interaction of internal and external factors" (Kristof-Brown and Billsberry, 2013: 1). There are two possibilities to enclose the phenomenon; subjective or objective fit. Subjective fit leans on individual perceptions in both individual and organizational values, whilst objective fit starts from individual values but focuses on finding the organizational values from elsewhere, e.g. from the organization as a whole. Value congruence can be then either calculated or interpreted as statistically significant interactions between subjective and objective fit. Perceived fit holds a great potential for a cognitive bias because it happens only in individuals heads. It has not been widely researched despite its strong relation to job satisfaction and organizational commitment. It has also been considered as potentially biased by affect and attitude. Therefore, their calculated interactions should be closely related (Kristof-Brown and Billsberry, 2013).

Leung et al. (2006: 666) mention that in PO fit literature it is common to describe an organization "by a set of static organizational characteristics for individuals to fit in, rather than dynamic factors which change with time". Whilst this gives a useful picture of an organization, it does not quite cover the fit issue in practice, as it has been noticed by e.g. Johnson et al. (2013) who view person-environment fit (PE fit) as a continuous variable instead of a categorical one. According to them, fit might develop in time towards any direction—fit or misfit, but it has not been investigated yet *how* it actually develops. It has been agreed, though, that a certain level of fit is beneficial for individual well-being affecting behavior and attitudes (e.g. Kristof-Brown, Barrick and Stevens, 2005; Kammeyer-Mueller, Schilpzand and Rubenstein, 2013; Kristof-Brown and Billsberry, 2013; Yu, 2013) as well as eventually to organizational performance.

PO fit pays attention to the bottlenecks in the relationship between a person and the organization,

and thus can help in bringing up the theoretical issues that can be addressed by effectuation. PO fit is about either party, individual and/or an organization benefiting from the other party (e.g. Kristof, 1996; Verquer, Beehr and Wagner, 2003; Kristof-Brown, Barrick and Stevens, 2005; Piasentin and Chapman, 2006) or the value congruence between the parties (e.g. Guan et al., 2011). Effectuation may help in explaining how employees could effectuate the fit and how effectuating the fit might be enabled in the organization.

## *2.2 Person-organization fit and the organization*

Resick et al. (2013) view the individual fit schemas unique as they vary from person to person. When knowledge is constructed in interaction, it is important to discover what is real to the individuals because it affects their behavior (Kristof-Brown and Billsberry, 2013). There are also conscious ways to construct the fit. Johnson et al. (2013) explain how self-regulation processes underlie the strivings for fit through learning, comparing, feedback, and unlearning. In balance theory, the tension affected by the inconsistency in attitudes towards an object leads into a motivation to create the balance (Yu, 2013). Yu (2013) also explains how proactive, conscious and planned behaviors as job crafting, role adjustment and deal making relate to person organization fit. Job crafting is making changes in how the job is performed, and with whom to interact while doing the job. Role adjustment happens to high performing employees when trust in their performance leads to supervisors giving them more responsibilities. Job negotiation tells about how supervisors allow changes in employee's jobs.

## **3. Entrepreneurial behavior**

Entrepreneurial behavior has been shown to be crucial to organizational performance in changing environments (Teece 2007; Augier and Teece, 2009)<sup>2</sup>. As Teece (2007) states, skilled individuals are not enough to create competitive advantage, it also asks entrepreneurial behavior at least from the management to see how and when to orchestrate these skills and to better utilize the know-how that might otherwise be underused, or leak outside the organization. Wang et al. (2010) also recognize the positive influence of organizational focus on skill-based innovation and teamwork, which resembles effectuation for organizational effectiveness, meanwhile the hindering effect of outcome orientation and stability resemble causation<sup>3</sup>.

---

<sup>2</sup> Whilst some individuals hold skills and abilities that can be considered entrepreneurial, dynamic capabilities approach considers how these abilities could be embedded in the organization. Thus dynamic capabilities aim at sensing, seizing and transforming capabilities in order "to generate and exploit internal and external firm-specific competences" (Augier and Teece, 2009: 412).

<sup>3</sup> Causation and effectuation have usually been researched together. Causation is more traditional, goal and prediction-based logic of enactment.

Though organizations are in constant change, the organizational setting is quite bounded an environment with a certain personnel working in it, and using available resources. For individuals in the organization it is challenging to break deeply rooted habits and to question nonfunctional rules and regulations. Usually they are silently accepted, and have become a familiar frame for acting and behaving. This is pointed out for example by Joas (2005: 101): "...the products of human labour reflect, according to Marx, not only the inner essential powers of the workers but also rules of appropriate use and norms of social distribution", as well as by Lusch and Vargo (2014). This again, may appear as sticky knowledge (Turner and Makhija, 2006) which refers to difficulties to fluently learn and adopt new perspectives, and to simultaneously unlearn the old and non-functional ones. Krueger (2007) suggests that breaking habits requires affecting individuals' deep belief systems. In organizational context, several layers of belief systems come into question from the individual and group levels to the organizational and societal. One possibility to look closer at the belief systems is through social identity approach (e.g. Crocetti et al., 2014). Social identity theory explains how identity is constructed in groups and social entities. Individuals identify themselves with the groups in order to maintain a positive sense of themselves (Cornelissen, Haslam and Balmer, 2007). For most people the occupational identity is the most important identity domain (Crocetti et al., 2014).

### *3.1 Entrepreneurial behavior in making change*

Entrepreneurial behavior can be one means to affect the deep belief systems and interrupt nonfunctional routines. However, interrupting routinized behavior can be difficult, because it causes uncertainty, which may be perceived as uncomfortable by individuals. According to McMullen and Shepherd (2006) uncertainty may prevent entrepreneurial behavior by producing hesitancy when routines are interrupted, by promoting indecision between numerous alternatives, and by encouraging procrastination through labelling the options seem as unfavorable. Entrepreneurial behavior can be viewed as the outcome of the willingness towards bearing perceived uncertainty. In other words, if uncertainty prevents the action in a certain situation, entrepreneurial action, (action towards making something happen), appears when an individual is willing (and able) to handle the perceived uncertainty.

McMullen and Shepherd (2006) argue that this willingness to bear the perceived uncertainty consists of a belief-desire configuration, where individuals believe they know what they should do in order to reach a desired goal. Thus, willingness to bear the uncertainty and act rises when individuals have a clear understanding over what they are doing and why they are doing it. Following the thoughts of Crocetti et al. (2014), this clarity of understanding goes also hand in hand with the strength of individual's personal identity. They argue that individuals with strong identity are more prone to have a stronger social identity, and they are able form more mature interpersonal relationships. Yet again, individuals with firm identities also have better possibilities in forming a firm occupational identity. When effort is put in learning and interaction, and when the support and encouragement

is gained from the behalf of others, it may be far easier for individuals to overcome the doubt and act. This encouragement of others might also enhance the possibilities towards enactment. Now we shall consider a little closer how the enactment can be further developed, leading into co-creational outcomes.

### *3.2 Effectuation theory as a model for enactment*

Sarasvathy (2001; 2008) developed a model of effectuation as a form of entrepreneurial expertise by observing and researching the behavior of expert entrepreneurs. As Sarasvathy and Dew (2008: 243) declare, effectuation “builds on prior knowledge and experience and entails acts of imagination” but it is not essentially intuitive, more like conscious action based on individual’s deep knowledge and skill base. Effectual practices call for awareness of one’s own knowledge and skills as well as making them explicit. More specifically, the use of effectual logics requires open communication between individuals. “Effectuation seeks to put the ‘human’ back into human action” (Sarasvathy and Dew, 2008: 243).

Effectuation perspective views reality as a construction—not previously existing but depending on collective individual action (also in Teece, 2007). In effectuation, future is characterized by unpredictability. Because environments can only temporarily be made predictable and stable, effectual interaction could be a means to leverage as well the regularities as the contingencies in creating novelty. When we know what we have and have ideas on where we would like to go, we can control the future so that we do not need to predict it. We can distinguish the controllable and uncontrollable parts from each other and concentrate on what we can control, using that knowledge to reshape the environment (Sarasvathy et al., 2008).

In order to differentiate the two logics, effectuation and causation from each other, there is a need to understand the worldviews behind them, the power and differences regarding the concepts of control and prediction. The logic of effectuation is summed up in the statement: “To the extent that we can control the future, we do not need to predict it” (Sarasvathy, 2001: 252; 2008: 91), which also holds together the four principles of effectuation. This logic is seen to work best in the situations where individual action has (or seems to have) a great influence on how the future will be shaped. The logic of causation, however, is almost the inverse: “To the extent that we can predict the future, we can control it” (Sarasvathy, 2001: 252; 2008: 91). This logic is thought to best suit the situations where certain relatively stable and predictable trends can be detected. Sarasvathy and Dew (2005) also suggest that causation and effectuation can be seen as complementary instead of exclusive.

Effectuation is about creating opportunities instead of only exploring and exploiting them. Sarasvathy (2001) clarifies that it is more about control than it is about prediction. As Sarasvathy (2008: 180) suggests, “profitable opportunities are created in those societies and epochs in which people strive to live well and construct their environments using entrepreneurial means and methods”. Individual well-being gained through striving and self-knowledge is viewed as central in effectuation.



## 4. Effectuation and person-organization fit

PO fit has been connected to proactive behavior (Yu, 2013). Whilst effectuation could also be perceived as a form of proactive behavior, it has not been previously used with PO fit theory. When there is a willingness to integrate two theories, there is also a need to consider where they fit and why. Effectuation principles fit well in the organizational context by explaining individual behavioral logic, starting from individual and her or his means and striving towards more functional ways to co-create and shape the future. The theory concentrates in the dynamics of the four main principles. Means function as a starting point. Affordable loss facilitates the negotiations, partnerships are held as growth and development strategies, and contingencies as something that can be used as an advantage.

### 4.1 Uncertainty and control

Lusch and Vargo (2012) explain how enterprising individuals integrate resources to better cope with uncertainty. Effectuation has been found as a logic that is functional in situations needing improvisation under scarce resources and high uncertainty. Employees cannot always choose how to develop their job, or that they would always have the strength to do it. Some decisions are made for them and they just have to deal with the consequences—or try more to speak up with their concerns. What they can control is *how* they do their assigned job and *how* they use their creativity in order to gain more control over their own situation. Rostgaard Evald and Senderovitz (2013: 296) hold effectuation as a very potential means in “capturing and conceptualizing the improvisation and decision-making approach for SMEs when engaging in ICV [internal corporate venturing]”. They emphasize the suitability of effectuation logic “for infusing innovative thinking and development”. In Table 1 and Table 2, some uncertainty characteristics are presented and PO fit equivalents to uncertainty are considered. As well, the effectual response to uncertainty—predictive control—is considered and its PO fit equivalents are suggested.

**Table 1. Knightian uncertainty - Characteristics and suggested PO fit equivalents**

<b>Knightian uncertainty</b>	<b>PO fit equivalent</b>
Imperfect knowledge of the future (Knight, 1964 [1921]).	Specific skills and knowledge help in finding more relevant knowledge that helps in reducing uncertainty (Cable and DeRue, 2002).
World is in constant change so the future is unpredictable. Unpredictability lies in situations where we do not know the outcome (Knight, 1964 [1921]).	The need for cognitive closure (desire for predictability, structure and non-ambiguity) gives motivation to reduce uncertainty (Yu, 2013).
A true uncertainty cannot be measured (Knight, 1964 [1921]).	Perceived fit/misfit (Yu, 2013).

**Table 2. Non-predictive control-characteristics and suggested PO fit equivalents**

Effectuation/Non-predictive control	PO fit equivalent
Control over the future (Sarasvathy, 2001; 2008).	Achieving fit (being around similar others and similar values) reduces perceived uncertainty (Yu, 2013).
To the extent that we can control the future, we do not need to predict it (Sarasvathy, 2001; 2008).	Fit based on similarity enhances trust and interaction (Edwards et al., 2006).
Human action shapes the future (Goodman, 1978; Spinoza, Flores and Dreyfus, 1997; Sarasvathy, 2008). Designing the effects (Sarasvathy, 2003). Trying without knowing the consequences (Sarasvathy, 2008; Read et al., 2011).	Proactiveness (Yu, 2013).

Developing ones job requires as well knowledge about “how things are at their best”, (mainly mental) resources to actually develop the job towards the direction that is closer to “how things are at their best” and/or creativity to find alternatives for the obvious and conservative resolutions. Thus developing ones job requires appreciating and understanding individual enactment, space to fail, as well as for management and supervision of the results so that the balance is gained as well in individuals as in the organization as a whole.

The scarcity of resources is usually due to what there is available in the organizations; the facilities might not be “the latest” and the individuals might not have the skills required to do things “by the book”. Also because of interaction with some individuals might be easier then with others, the cooperation between individuals might also be sometimes challenging.

*4.2 Means as a starting point: the Bird-in-Hand Principle in an organization*

Organizational context, through social interactions, shared beliefs, values and expectations, may sometimes restrict individuals from viewing the actual potential of their capabilities. The contextual factors may instead help them to fulfill their expectations according to the job description, the expectations of others, et cetera. Giving up these presumptions may be difficult. As Krueger (2007) mentioned, deep belief systems have to be affected in order to break the habits and routines. Identity can be seen as given (Sarasvathy and Dew, 2005) in a certain time and space, but overall as a construction (Cornelissen, Haslam and Balmer, 2007; Crocetti at al., 2014). When assuming identity as a construction, it is quite easy to agree with Venkataraman et al. (2011) notion that entrepreneurship can be taught to individuals. This line of thought suggests that entrepreneurial behavior is more about combining rationality and creativity, questioning the norms where they cease to guide action and instead prevent it.

Merecz and Andysz (2012) suggest that there is an optimal level of fit that helps in maintaining workers' health, work ability and quality of life. In addition, Yu (2013) thinks that the fit between a person and the environment may affect their overall well-being, and that fit is motivated by fundamental drives. Yu (2013) mentions that according to previous research, individuals want to feel fit with their environment, and thus strive towards consistency in self construction, (according to their attitudes, beliefs, and behavior) towards hedonism, uncertainty reduction, control, and belonging. Individuals even try to alter e.g. their work-related values in order to fit in (Yu, 2013).

Wheeler, Halbesleben and Shanine (2013), on the other hand, bring up that according to PO fit literature, stress appears when environmental demands exceed individual abilities or when organizational resources do not answer to employee needs. Johnson et al. (2013) call for understanding why fitting in predicts workers attitudes, behavior, and well-being. In other words, why the environmental fit affects us (and how we feel) so strongly? Insecurity rises when we are uncertain about the outcome of our actions, when we do not know them. Insecurity is greater when we are outside our comfortability zone, outside of our safe knowledge barriers, exceeding our known and familiar limits and striving towards learning new things. It is a zone where failures start to happen and there should probably be a space to fail in order to learn (Shepherd, 2003).

Person organization fit theory assumes perceived fit as a very important factor in employee well-being in an organization (Johnson and Onwuegbuzie, 2014). A great stress factor, on the other hand, is the perceived gap between environmental demands and individual abilities (Wheeler, Halbesleben and Shanine, 2013). For an individual, inside the limits of ones skills and abilities lies the comfortable zone, but environmental needs push individuals towards and over the limits, towards uncertainty and as well the possibilities for failure. Although failing precedes learning (Shepherd, 2003) and it should be allowed, it may also prevent development if it is not at all controlled.

Effectuation goes in line with this thought line; it starts with the means (who you are, what you have and whom you know) and brings individuals basically closer to the fit with themselves in the first place. Knowledge, skills, interests and other tacit factors are considered as individual means. In Table 3, some "means" characteristics are presented.

**Table 3. Effectuation/Means - characteristics and suggested PO fit equivalents**

Effectuation/Means	PO fit equivalent
Start with your means: who I am, what I know, who I know (Sarasvathy, 2001; Read et al., 2011).	PO fit as perceived fit. PO fit as an internal feeling (Kristof-Brown and Billsberry, 2013)
Outcome is created during the process (Sarasvathy, 2008).	Transforming individual capabilities into organizational competitiveness (Leung et al., 2006).
Making an effect towards the direction collectively defined and supported by the co-creators (Read et al., 2011).	Understanding. When knowledge is constructed in interaction, it is important to discover what is real to the individuals because it affects their behavior (Kristof-Brown and Billsberry, 2013).
Ask the experts (Sarasvathy, 2008; Read et al., 2011).	Individual knowledge, capabilities and skills help in dealing with complexities and contingencies (Yu, 2013).
Individual abilities are limited and specialized; they fit for an exchange with other individuals (Lusch and Vargo, 2014).	Objective fit starts from individual values but focuses in finding the organizational values from elsewhere, e.g. from the organization as a whole (Kristof-Brown and Billsberry, 2013).
Means-driven processes are expected to be particularly time consuming when innovativeness is high, as it fosters uncertainty (Brettel et al., 2012).	Actual fit is a long-term variable (Kristof, 1996).

Causal logics focuses on the ends (goals) and seeks for the means that should be used in order to reach the predetermined goal, while effectual logics focuses on means and seeks towards cooperation in order to construct various possible outcomes and finally choose the best for all from among the many. Causally thinking the outcome is defined in the advantage, and thus it might be easier to feel failure and disappointment in the first place. Effectually the outcome is created during the process. The outcome changes, and thus failures and disappointments might be perceived as smaller or even non-existent. Another major perceptive change is between causally choosing and effectually designing. Causators choose the effect they want to make. Effectuation is about trying without knowing the consequences (Sarasvathy, 2008); making an effect towards the direction collectively defined and supported by the co-creators (Read et al., 2011). Whilst individual abilities are limited and specialized, they fit for an exchange with other individuals (Lusch and Vargo, 2014).

#### *4.3 The Affordable Loss Principle in an organization*

Affordable Loss Principle in effectuation means small step—low risk action. It is investing only that much, what one affords to lose, to be it for example time, effort, money or learning. Affordable

loss in the organization could thus be considered as optimizing the tasks. It is also using all the meaningful resources available in order to create a better outcome. Often individuals have skills and abilities that they cannot use, or just are not using in their work. Effectuation thinking is noticing these “slack resources”, and striving towards making them in a better use.

Affordable loss in the organization could also mean getting rid of non-functional rules and regulations in order to get the work done more properly seen from various perspectives. Affordable loss here means that what we can afford to “not to do” neither does affect the outcome negatively nor is not important in order to perform well in this particular job. If we start to concentrate on what is essential instead of what has to be done because it has always been done, there will be more space to notice the actual requirements of the job. Affordable loss can also be connected with unlearning, and identity construction as getting rid of non-functional parts of identity, as irrational fears, dysfunctional action patterns, or compulsive thoughts, as well as unlearning unimportant information that are no longer needed.

Causal logic concentrates on finding optimal strategies and maximizing the returns. Effectuation concentrates on what can be lost in order to create something in cooperation with others by using the available means (Sarasvathy, 2008). Causators invest time, effort and energy in order to reach a specific goal whilst effectuators take stock considering what they do not need, and put effort in finding slack resources in order to construct something that could benefit also others, and that could be further developed in several ways. In Table 4, some “affordable loss” characteristics are presented.

**Table 4. Effectuation/Affordable loss - characteristics and suggested PO fit equivalents**

<b>Effectuation/Affordable Loss</b>	<b>PO fit equivalent</b>
What can be lost in order to create something new in cooperation with others by using the available means (Sarasvathy, 2008).	Fit might develop in time towards any direction: fit or misfit (Johnson et al., 2013).
Pay attention to the cheapest alternatives and come up with creative ways to do things more efficiently with no additional costs (Sarasvathy, 2008).	Self-regulation processes underlie the strivings for fit (Johnson et al., 2013).
Control over the risks (Read et al., 2011).	Individuals want their self-concept (attitudes, beliefs and values) to be consistent (Yu, 2013).
Risk less and make small changes all the time on the way (Read et al., 2011).	Individuals tend to act in ways that are consistent with their perception of themselves (Yu, 2013).
Choosing options that create more options in the future (Sarasvathy, 2001; 2008). Finding creative ways to bring one’s own idea into existence (Goodman, 1978; Spinosa, Flores & Dreyfus 1997; Sarasvathy, 2008).	Conscious and planned proactive behaviors; job crafting, role adjustment, deal making (Yu, 2013).

At work, affordable loss could be noticing and getting rid of routines and behaviors that restrict the work to be done properly. In causation the information is perceived to be beyond the control of the individual, and mostly dependent on the effect that is planned to be created. In effectuation the means are known, and the various possible effects are derived and (co)created from the means.

#### *4.4 Partnerships in job development: the Crazy Quilt Principle in an organization*

Piasentin and Chapman (2006) suggest that organization should be treated consisting of individuals behaving in it, and not as a single human-like organism that has an awareness of its own (Cornelissen, Haslam and Balmer, 2007). Organizations, or more generally “the collective-stuff-of-human-life is not a substantial reality and does not have the same ontological status as individuals” (Jenkins, 2010: 10). Even though an organization is constructed through the interrelations of its stakeholders, it is, or at least has a possibility to be, more than the sum of its parts because of its possibility to combine the capabilities of its members.

Kammeyer-Mueller, Schilpzand and Rubenstein (2013) suggest that the organizational newcomers reflect with superficial features of the organization. Dyadic relationships in organizations can be described by three categories: first the friendship-based (supplementary) relationships; second the relationships based on instrumental exchange (complementary); and third, misfit (when the commonalities between individuals are exceptionally rare). This, on the other hand, may also have something to do with the strength of the identity. Crocetti et al. (2014) found in their research that strong personal identity may indicate also strong social identity, which may as well result as more mature interpersonal relationships at work. More accurately, deeper involvement in the organization may consider also the deeper interactions between individuals. According to Kammeyer-Mueller, Schilpzand and Rubenstein (2013), the dyadic relationships in maturing and developing relationships may be described by a interpersonal fit development process, which moves through the following stages: (i) disclosure; (ii) support; (iii) proactivity; (iv) exchanges of goods and services, and (iv) social undermining. Through perceived fit it is possible to reach certain workplace consequences that entail understanding. Individuals who feel fit, and develop relationships further in the organization, are more likely to build positive relationships and support one another.

Piasentin and Chapman (2007) perceive complementary fit as occurring when individuals can complement other employees’ characteristics by their unique skills that are also valuable to the organization. Combining capabilities between individuals enhances effectual partnerships—when individuals know how the other person will fulfill their capabilities, it is easier for them to cooperate. If the difference is too big, and there is no understanding in between the parties, it might prevent the partnership. Leung et al. (2006) suggest that strong ties may bring complementary talents to the network. All in all, it is valuable for individuals to share somewhat similar common ground and values, while it is complementary and enriching

to differ in knowledge and capabilities within an organization as well as between organizations. Uniqueness as an individual quality would benefit from the organizational value or attitude of perceiving being different as desirable and valuable.

Although Kammeyer-Mueller, Schilpzand and Rubenstein (2013) point out that the social relationships have not been researched in the organizational context, social identity research (e.g. Haslam, 1994; Cornelissen, Haslam and Balmer, 2007; Crocetti et al., 2014) has addresses some issues that are useful in this context. Kammeyer-Mueller, Schilpzand and Rubenstein (2013) notice that high levels of PO fit seem to enhance the sense of community, resulting in high levels of organizational citizenship behavior. This note goes in line with the one made by Crocetti et al. (2014) that individuals also strive towards identifying themselves as parts of their social groups, thus fitting in. When organizational culture is viewed as a construction, entrepreneurship in the organization is constructing, building, expressing and making changes. From this point of view, also partnerships should be formed in order to perform better in group than alone; thus, by considering also both the complementary (instrumental exchange) and supplementary (friendships) fit aspects in the interpersonal relationships. In order to function effectually in an organization, individuals should know each other's skills in order to be able to construct alliances and increase the feeling of belonging and being part of a whole, which according to Yu (2013) as well as Crocetti et al. (2014), increases the well-being.

Well-being in here is considered a result of individuals' experiences from their positive self-concept, from belonging to a certain social group, and positive evaluations of that social group from the outsiders—a consistency and harmony of attitudes, beliefs, and behavior (Yu, 2013) between the levels of subjective, intersubjective and objective. Well-being may actually lead individuals working more than they are asked to. According to Crocetti et al. (2014) individuals' low identification with their working organization or with their social group may result in dissonance as well as to experience more stress and burnout<sup>4</sup>. Because effectuation is a small-step interactional strategy, individuals are more likely to get positive feedback of their actions because they negotiate about the possibilities with other individuals involved. In table five, some "partnerships" characteristics are presented.

---

<sup>4</sup> See also Haslam (1994) and Cornelissen, Haslam and Balmer (2007).

**Table 5. Effectuation/Partnerships - characteristics and suggested PO fit equivalents**

<b>Effectuation/Partnerships</b>	<b>PO fit equivalent</b>
Co-creation (Vargo and Lusch, 2004).	Perceived fit develops in social interactions (Kammeyer-Mueller, Schilpzand and Rubenstein, 2013).
Alliances and pre-commitments in order to reduce uncertainty and entry barriers (Sarasvathy 2001; 2008).	PO fit is about either party, individual and/or an organization benefiting from the other party (Kristof, 1996; Verquer, Beehr and Wagner, 2003; Kristof-Brown, Zimmerman and Johnson 2005; Piasentin and Chapman 2006).
New opportunities can be co-created (Sarasvathy 2001; 2003; 2008).	PO fit can also be proactive; conscious and planned behaviors as job crafting, role adjustment and deal making (Yu, 2013).
Effectuators create the future through dynamic interactions between the various stakeholders (Sarasvathy, 2008).	PO fit means the value congruence between the parties (Guan et al., 2011).
Welcomes the interested and committed individuals on board during the process (Sarasvathy, 2008).	Complementary fit; an individual fulfills a void or adds something missing to the organization (Piasentin and Chapman, 2006).
Partners provide resources (Read et al., 2011).	PO fit occurs when at least one entity provides what the other needs (Kristof, 1996).
Partners generate agendas and sub-goals regarding what they afford to lose (Read et al., 2011).	Negotiating changes for the benefit of all the parties (Yu, 2013).
Try to find beautiful pieces and put them together in order to make a meaningful and mind-blowing whole (Read et al., 2011).	The quality of core human resources in the organization affects organizational growth and well-being (Leung et al., 2006).

As causal models (e.g. Porter diamond model) emphasize detailed competitive analyses aiming towards prediction, effectuation emphasizes alliances and pre-commitments (Sarasvathy, 2008), aiming towards co-creation of the future. Crazy Quilt Principle welcomes the interested and committed individuals on board during the process, even though, or actually just because, it will possibly affect the outcome. Causally oriented individuals are interested in the outcome, they believe in the superiority of detailed competitive analyses, and do not change the outcome during the process. Effectuators create an unpredictable future through dynamic interactions between the various stakeholders whilst causators first craft a vision and then strive towards it in order to sell it to the targeted audience (Sarasvathy, 2008). Causators try to find the right pieces and put them together while effectuators try to find beautiful pieces and put them together in order to make a meaningful and mind-blowing whole (Read et al., 2011).



#### *4.5 Leveraging contingencies: the Lemonade Principle*

Self-regulation theories strive towards understanding employee behavior in relation to their goals; and especially focus on how individuals regulate the differences between the ideal practices leading to their preferred goal and the experienced situation. Following the thoughts of Johnson et al. (2013), there is a call for enactment when there is a lot of space between the ideal state of affairs and the perceived state of affairs. First of all, there seems to be two possible lines on how an individual can diminish the discrepancy; by putting effort in modifying (a) the outer environment or (b) the inner ideal standard. An individual is less affected by task-level discrepancies than person-level discrepancies. In addition, the velocity of change has been seen to affect individuals even more than the discrepancies themselves. While newcomers face great discrepancy between their skills and what they are expected to do, their discrepancy decreases fast and lasting negative emotions are unlikely to follow.

Discrepancies are cumulative internal contingencies. They may continue growing when an individual simply has to face them. While an individual can perceive contingencies as obstacles, effectually they are challenging. They call towards shifting strategy to a more functional one in the face of unexpected change. The other form of contingencies is unexpected external changes that affect an individual. Can individuals participate in change process? Are they heard? Are they able to leverage the contingencies, to actually make effort in working things out? Continuous attempts to enact as the situation requires, despite of the feeling that may arise from particular situations, may be challenging and stressful (Crocetti et al., 2014).

The lemonade principle refers to the phrase “When life gives you lemons, make lemonade”. Leveraging contingencies has been researched as the willingness to modify products, customization, and traits as openness, organicity, and transformational leadership style (Read, Song and Smit, 2009). As causators try to avoid unexpected events or to try to reach the goal in spite of them, effectuators seek towards leveraging the unexpected (Sarasvathy, 2008). Effectuators aim in understanding the surprise and again outweighing the following possibilities by taking them as necessary parts of the whole and seeking towards understanding them and their influence. Thus, the effectual process is incrementally changing as uncertainty and surprises may be used in order to create opportunities that were not possible without the unexpected. In table six, some “leveraging contingencies” characteristics are presented.

**Table 6. Effectuation/Leveraging Contingencies - characteristics and suggested PO fit equivalents**

Effectuation/Leveraging Contingencies	PO fit equivalent
Perceiving surprises as building blocks and resources (Read et al., 2011). Both good and bad surprises can be used as inputs when creating something new (Sarasvathy, 2008).	Organizational changes may also affect perceived fit (Kristof, 1996).
Leveraging the unexpected (Sarasvathy, 2008).	In balance theory, the tension affected by the inconsistency in attitudes towards an object leads to a motivation to create the balance. Cognitive dissonance results as needs for cognitive adjustments (Yu, 2013).
Unexpected “is a resource that may be turned into something valuable in entrepreneurial hands” (Read et al., 2011).	Actual (objective) fit may improve the process outcomes as communication, group functioning, and work coordination, even if individuals do not perceive the fit (Kristof, 1996).
Uncertainty is a resource and a process (Sarasvathy, 2008).	Actual (objective) fit takes more time to become visible after the change (Kristof,1996).

Read et al. (2011) lively describe this as inventing a new feeling. When things do not go as planned and we feel pressure towards succeeding, we indeed feel disappointment. But what if this disappointment would not be felt (at least for not too long) and instead, enthusiasm and creativity would replace it? This would indeed need some playfulness and an attitude to not to take things too seriously. A causal thinker concentrates on goals and exceeding them as fast as possible (Read et al., 2011). Obstacles stand on the way and easily lead into frustration. For effectuation, the unexpected “is a resource that may be turned into something valuable in entrepreneurial hands” (Read et al., 2011: 141).

#### *4.6 Effectual person-organization fit effectuation in organizations*

As in Sarasvathy’s original effectuation framework, this study also has four subcategories of effectuation which are now considered from the viewpoint of an employee, to be used as a framework in Figure 1. Means of an employee are his/her identity, knowledge, skills, capabilities. Individuals’ personal capabilities and skills as well as one’s awareness of those skills have an impact on his/her work and personal way to interact with others affects the perceived consistency with his or her environments and the other individuals. Partnerships get formed when individuals interact with each other and combine their capabilities. Among interaction comes deeper sense of community, the ties between cooperative employees get stronger and they start to form alliances.

Figure 1. Effectual PO fit – effectuation in organizations

<b>MEANS</b> Identity Knowledge Skills Capabilities Consistency	<b>AFFORDABLE LOSS</b> Slack resources What is essential? What can we afford to lose?
<b>PARTNERSHIPS</b> Interaction Combining capabilities Sense of community Strong ties Cooperation	<b>LEVERAGING CONTINGENCIES</b> Diminish the discrepancy Change velocity Participation Awareness

Affordable loss in the workplace comes from considering what are the slack resources of the individuals. What are they really well at but perhaps are not currently using it in their work? It also means considering what is essential in one's job and developing the job further by considering what could be changed in order the work to be done more efficiently. Leveraging contingencies needs abilities to diminish the discrepancy between idealism and realism. It needs awareness of the change velocity, possibilities to participate and to be aware and chances to be heard in the organization. Contingency leverage in the organization needs reflection between the person and the organization.

## 5. Discussion

“People are the key to organization competitiveness and the quality of core human resources in a firm impacts organizational growth and well-being” (Leung et al., 2006: 664). Thus, special attention should be paid to transforming individual capabilities into organizational competitiveness. However, according to a recent clarification of Audretsch and Aldridge (2014: 14), for example the innovative entrepreneurs of SMEs are not always able to “attract adequate resources”, and thus their possibilities to launch, sustain or grow ventures may diminish. There is the possibility to search for partners in order to attract the attention of the investors. Governments may encourage collaboration between ventures through e.g. competition laws in order to “permit shared patent pools”, research between joint ventures, as well as encourage “open source intellectual property in designs and software” (Forge, et al., 2013: 8). Moreover, policies enforcing clusters have been considered as important (Forge et al., 2013), but yet the policies cannot force individuals to co-create and integrate their skills.

The contemporary policy programs may not be optimal in promoting innovativeness, but they still have had a positive impact on the US innovative performance (Audretsch and Aldridge, 2014). As the industrial policies encourage innovation, firms have to find out how it can be fostered, controlled, and transformed into competitive advantage. This article suggests by the combination of effectuation and PO fit that: (i) individuals need to feel fit to feel well (a central consideration of PO fit); (ii) individuals need to feel they can control their environment in order to feel well and in order to enact (a central consideration on effectuation); and (iii) it is possible to enhance the feeling of fit by enhancing the possibilities to control one's environment.

These fit creating behaviors and actions are quite effectual in nature but is there enough space in a causal organization for effectuators? Are the organizational culture and management practices flexible enough for the enactment to emerge? Sarasvathy et al. (2008) suggest that if there could be a way to give individuals some behavioral space, individuals could act more present-in-a-moment sense. In organizations, from the perspective of an individual, goals may vary but the behavioral space is bounded and yet somewhat uncertain. The resources are available, but it may be challenging to make them into a better use.

PO fit research brings up the critical points about where we actually try to fit when we try to fit in an organization. Are we trying to fit to some entity called "an organization" or do we rather call the construction of beliefs and values of the individuals in the organization (and the ones who were there before those individuals) "the organization"? Thus, do we then try to fit in the beliefs and values of those people, or even to their interpretation of those beliefs and values? Weick (1969), for example, emphasizes active organizing consisting of the actions of the interdependent human actors instead of a more passive adapting into an environment. This is consistent with Piasentin and Chapman (2006) considering how organizations should not be held separate from individuals working in them. Effectuation logic is considered as beneficial for employees especially in professions where high level of creativity, deep professional knowledge and cooperation could contribute severely to organizational performance when combined. As Sarasvathy (2001: 252) mentions, "in areas where human action (locally or in the aggregate) is the predominant factor shaping the future".

This contribution has two differing aims and wishes for the future: (a) to guide the empirical effectuation research in the context of an organization amongst employees and (b) to challenge other researchers to consider how effectuation should be researched in the organizational context, and which theories would best fit in researching effectuation amongst employees. Altogether, it seems that the influence of effectuation, or enactment in general, could be a moderating factor between both perceived fit and misfit; an opportunity towards proactively constructing fit in a workplace. Misfit may emerge for example, when an individual just is not enough connected with other individuals and/or groups. (Kammeyer-Mueller, Schilpzand and Rubenstein, 2013; Crocetti et al., 2014). Yu (2013) also mentions that unreasonable personal goals that do not match with individuals abilities may also result as misfit. Meaningful is also whether there is understanding between the parties (Piasentin and Chapman, 2007).

This study researched the relationships between effectuation and PO fit, thus answering a call of Brettel et al. (2012) and Perry, Chandler and Markova (2012) considering effectuation and the established constructs in the organizational context. This study also aimed to consider the dimensions of effectuation in organizational context, thus answering the call of Perry, Chandler and Markova (2012) and McKelvie, DeTienne and Chandler (2013) and of better defining and researching the antecedents of effectuation, especially in the context of an organization. The purpose of this article was to clarify the path towards making employees be seen as more valuable, as actively participating, proactive parts having the potential to co-creatively construct the organizations. It aimed to answer the question: how does effectuation appear in the organizations and employees and how could it be allowed and fostered in a causal organization? This research moves towards enhancing our understanding of the possibilities to research and possibly even diminish the effect of uncertainty in organizations—towards transforming unpredictability into control.

### *5.1 Future implications*

This study considered the notions of social identity research of e.g. Crocetti et al. (2014) that it is possible to enhance the feelings of fit and well-being by enhancing the possibilities to control one's environment, and explains further how it is also possible to foster enactment through effectuation logic. Researching effectuation and using person organization fit as help seems to be a fertile ground for research. This paper provides, however, only some preliminary suggestions, and the topic needs to be discussed further and empirically studied. Effectuation was noticed as a logic of expert entrepreneurs but has recently been researched also among new venture creation (Read and Sarasvathy, 2005) angel investors (Wiltbank et al., 2009), and in established firms (Wiltbank et al. 2006; Da Costa and Brettel, 2011; Brettel et al., 2012). This paper contributes the latter stream of research and suggests that effectuation should be researched among employees in the organizations.

Future research should also address the question between the relationships of effectuation and PO fit also empirically. The important research questions would be for example the following: how the concepts of individual and social identities are related to effectuation? How is PO fit related to effectuation? Future research needs to more clearly and deeply study and evaluate the effects of the interpersonal level and especially effectual connections of individuals with their work, with persons around them and with their organization. It could also be beneficial to study the concept of misfit through the effectuation theory.

### *5.2 Limitations of the research*

This research is also not without limitations. Affect research was only superficially addressed in this research regarding some affect control issues, but the influence of the (uncontrolled) affect should definitely be taken into a consideration. Moreover, further attention could be paid

in the changes appearing in the growth state or the firm. The suggestion of Delgado Piña et al. (2007) considering the growth state of the firm being advantageous for PO fit should be more comprehensively investigated as well as the relation of effectual behavior on it. As Wang, et al. (2010) argue for the hindering effects of overall organizational emphasis on outcomes and stability, it would be interesting to find out does this assumption hold in every growth state of the firm.

## References

- Audretsch, D. & Aldridge, T. (2014). The Development of US Policies directed at stimulating Innovation and Entrepreneurship. European Commission, Joint Research Centre, Institute for Prospective Technological Studies. JRC Scientific and Policy Report, EUR 26518 EN. Available at: <ftp://139.191.159.82/pub/EURdoc/JRC87894.pdf> [Accessed: 3 November 2014].
- Augier, M. & Teece, D.J. (2009). Dynamic Capabilities and the Role of Managers in Business Strategy and Economic Performance. *Organization Science*, 20(2): 410-421. DOI: <http://dx.doi.org/10.1287/orsc.1090.0424>
- Bolander, P. & Sandberg, J. (2013). How Employee Selection Decisions Are Made in Practice. *Organization Studies*, 34(3): 285-311. DOI: <http://dx.doi.org/10.1177/0170840612464757>
- Bourne, H. & Jenkins, M. (2013). Organizational Values: A Dynamic Perspective. *Organization Studies*, 34(4): 495-514. DOI: <http://dx.doi.org/10.1177/0170840612467155>
- Brettel, M., Mauer, R., Engelen, A. & Küpper, D. (2012). Corporate effectuation: Entrepreneurial action and its impact on R&D performance. *Journal of Business Venturing*, 27(2): 167-184. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2011.01.001>
- Cable, D.M., & DeRue, D.S. (2002). The convergent and discriminant validity of subjective fit. Perceptions. *Journal of Applied Psychology*, 87: 875-884. DOI: <http://dx.doi.org/10.1037//0021-9010.87.5.875>
- Cable, D.M. & Edwards, J.R. (2004) Complementary and supplementary fit: A theoretical and empirical integration. *Journal of Applied Psychology*, 89(5): 822-834. DOI: <http://dx.doi.org/10.1037/0021-9010.89.5.822>
- Carrier, C. (1996). Intrapreneurship in Small Business: An Exploratory Study. *Entrepreneurship Theory & Practice*, 21 (1): 5-21.
- Cornelissen, J.P., Haslam, A. & Balmer, J.M.T. (2007). Social Identity, Organizational Identity and Corporate identity: Towards an Integrated Understanding of Process, Patternings and Products. *British Journal of Management*, 18: 1-16. DOI: <http://dx.doi.org/10.1111/j.1467-8551.2007.00522.x>
- Crocetti, E., Avanzi, L., Hawk, S.T., Fraccaroli, F. & Meeus, W. (2014). Personal and Social Facets of Job Identity: A Person-Centered Approach. *Journal of Business Psychology*, 29: 281-300. DOI: <http://dx.doi.org/10.1007/s10869-013-9313-x>

- Da Costa, A.F. & Brettel, M. (2011). Employee Effectuation – What Makes corporate employees act like entrepreneurs. *Frontiers of Entrepreneurship Research*, 31(17): 555-566. Available at: <http://digitalknowledge.babson.edu/fer/vol31/iss17/2> [Accessed: 3 November 2014].
- Delgado Piña, M.I., Gómez Martínez, L., Romero Martínez, A.M. & Vázquez Inchausti, E. (2007). How do entrepreneurial firms manage human resources? The REDUR case. *Cuadernos de Gestión, Universidad Complutense de Madrid*, 7(1): 51-64. Available at: <http://www.ehu.eus/cuadernosdegestion/revista/index.php/en/numeros?a=da&y=2007&v=7&n=1&o=3> [Accessed: 3 November 2014].
- Dew, N., Read, S., Sarasvathy, S.D. & Wiltbank, R. (2008). Outlines of a behavioral theory of the entrepreneurial firm. *Journal of Economic Behavior & Organization*, 66: 37-59. DOI: <http://dx.doi.org/10.1016/j.jebo.2006.10.008>
- Edwards, J.R., Cable, D.M., Williamson, I.O., Schurer Lambert, L., & Shipp, A.J. (2006). The Phenomenology of Fit: Linking the Person and Environment to the Subjective Experience of Person–Environment Fit. *Journal of Applied Psychology*, 91(4): 802-827. DOI: <http://dx.doi.org/10.1037/0021-9010.91.4.802>
- Forge, S., Blackman, C., Goldberg, I. & Biag, F. (2013). Comparing Innovation Performance in the EU and the USA: Lessons from Three ICT Sub-Sectors. European Commission, Joint research centre. Institute for Prospective Technological Studies. JRC Scientific and Policy Report, EUR 25961 EN. Available at: <http://ftp.jrc.es/EURdoc/JRC81448.pdf> [Accessed: 3 November 2014].
- Goodman, N. (1978). *Ways of Worldmaking*. Indianapolis, IN, USA: Hackett Publishing Company.
- Guan, Y., Deng, H., Risavy, S.D., Bond, M.H., Li, F. (2011). Supplementary Fit, Complementary Fit, and Work-Related Outcomes: The Role of Self-Constraint. *Applied Psychology: An International Review*, 60: 286-310. DOI: <http://dx.doi.org/10.1111/j.1464-0597.2010.00436.x>
- Haslam, N. (1994). Mental representation of Social Relationships: Dimensions, Laws, or Categories? *Journal of Personality and Social Psychology*, 67(4): 575-584. DOI: <http://dx.doi.org/10.1037/0022-3514.67.4.575>
- Hodgson, G.M. (2007). Institutions and Individuals: Interaction and Evolution. *Organization Studies*, 28(1): 95-116. DOI: <http://dx.doi.org/10.1177/0170840607067832>
- Humphrey, S.E. Hollenbeck, J.R., Meyer, C.J. & Ilgen, D.R. (2011). Personality Configurations in Self-Managed Teams: A Natural Experiment on the Effects of Maximizing and Minimizing Variance in Traits. *Journal of Applied Psychology*, 41(7): 1701-1732. DOI: <http://dx.doi.org/10.1111/j.1559-1816.2011.00778.x>
- Humphrey, S.E., Hollenbeck, J.R., Meyer, C., & Ilgen, D.R. (2007). Trait configurations in self-managed teams: A conceptual examination of the use of seeding for maximizing and minimizing trait variance in teams. *Journal of Applied Psychology*, 92(3): 885-892. DOI: <http://dx.doi.org/10.1037/0021-9010.92.3.885>

- Jenkins, R. (2010). *Social Identity*. Wiltshire, UK: Routledge. Key Ideas. Taylor & Francis Group (3rd edition).
- Joas, H. (2005) [1996]. *The Creativity of Action*. Cambridge, UK: Polity Press.
- Johansson, A. & McKelvie, A. (2012). Unpacking the Antecedents of Effectuation and Causation in a Corporate Context. *Frontiers of Entrepreneurship Research*, 32(17): 1-14. Available at: <http://digitalknowledge.babson.edu/fer/vol32/iss17/1> [Accessed: 3 November 2014].
- Johnson, R.B. & Onwuegbuzie, A.J. 2004. Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7) 14-26.
- Johnson, R.E., Taing, M.U., Chang, C.-H. & Kawamoto, C.K. (2013). A Self-Regulation Approach to Person-Environment Fit in Kristof-Brown. In: A.L. Kristof-Brown & J. Billsberry (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 74-98.
- Kammeyer-Mueller, J.D., Schilpzand P. & Rubenstein, A.L. (2013). Dyadic Fit and the Process of Organizational Socialization. In A.L. Kristof-Brown, & J. Billsberry. (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 50-73.
- Knight, F. (1964) [1921] *Risk, Uncertainty and Profit*. Reprints of economic classics. New York, NY, USA: Augustus M. Kelley, Bookseller.
- Kristof, A.L. (1996). Person-Organization fit: And integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49: 1-49. DOI: <http://dx.doi.org/10.1111/j.1744-6570.1996.tb01790.x>
- Kristof-Brown, A., Barrick, M.R., Stevens, C.K. (2005). When opposites attract: A multi-sample demonstration of complementary person-team fit on extraversion. *Journal of Personality*, 73: 935-958. DOI: <http://dx.doi.org/10.1111/j.1467-6494.2005.00334.x>
- Kristof-Brown, A.L. & Billsberry, J. (2013). Fit for the Future. In: A.L. Kristof-Brown & J. Billsberry (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 1-18.
- Kristof-Brown, A.L., Zimmerman, R.D. & Johnson, E.C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology*, 58: 281-342. DOI: <http://dx.doi.org/10.1111/j.1744-6570.2005.00672.x>
- Krueger, N. (2007). What lies beneath? The Experiential Essence of Entrepreneurial thinking. *Entrepreneurship Theory & Practice*, 31: 123-138. DOI: <http://dx.doi.org/10.1111/j.1540-6520.2007.00166.x>
- Leung, A., Zhang, J., Wong, P.K. & Foo, M.F. (2006). The use of networks in human resource acquisition for entrepreneurial firms: Multiple "fit" considerations. *Journal of Business Venturing*, 21: 664-686. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2005.04.010>
- Lusch, R.F. & Vargo, S.L. (2014). *Service-Dominant Logic: Premises, perspectives, possibilities*. Cambridge, UK: Cambridge University Press.



- Lusch, R.F. & Vargo, S.L. (2012). The forum on markets and marketing (FMM): Advancing service-dominant logic. *Marketing Theory*, 12(2): 193-199. DOI: <http://dx.doi.org/10.1177/1470593111429509>
- McKelvie, A., DeTienne, D.R. & Chandler, G.N. (2013). What is the Appropriate Dependent Variable in Effectuation Research? *Frontiers of Entrepreneurship Research*, 33(4), Article 4. Available at: <http://digitalknowledge.babson.edu/cgi/viewcontent.cgi?article=2627&context=fer> [Accessed: 3 November 2014].
- 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: 132-152. DOI: <http://dx.doi.org/10.5465/AMR.2006.19379628>
- Merecz, D. & Andysz, A. (2012). Relationship between person-organization fit and objective and subjective health status (person-organization fit and health). *International Journal of Occupational Medicine and Environmental Health*, 25: 166-177. DOI: <http://dx.doi.org/10.2478/S13382-012-0020-z>
- Muchinsky, P.M. & Monahan, C.J. (1987). What is person-environment congruence? Supplementary versus complementary models of fit. *Journal of Vocational Behavior*, 31: 268-277. DOI: [http://dx.doi.org/10.1016/0001-8791\(87\)90043-1](http://dx.doi.org/10.1016/0001-8791(87)90043-1)
- Perry, J.T., Chandler, G.N. & Markova, G. (2012). Entrepreneurial Effectuation: A Review and Suggestions for Future Research. *Entrepreneurship Theory and Practice*. 36(4): 837-861. DOI: <http://dx.doi.org/10.1111/j.1540-6520.2010.00435.x>
- Piasentin, K.A. & Chapman, D.S. (2006). Subjective person-organization fit: Bridging the gap between conceptualization and measurement. *Journal of Vocational Behavior*, 69: 202-221. DOI: <http://dx.doi.org/10.1016/j.jvb.2006.05.001>
- Piasentin, K.A. & Chapman, D.S. (2007). Perceived similarity and complementarity as predictors of subjective person-organization fit. *Journal of Occupational and Organizational Psychology*, 80: 341-354. DOI: <http://dx.doi.org/10.1348/096317906X115453>
- Porter, M.E. (1985). *Competitive advantage*. New York, NY, USA: Free Press.
- Read, S. & Sarasvathy, S.D. (2005). Knowing What to Do and Doing What You Know: Effectuation as a Form of Entrepreneurial Expertise. *The Journal of Private Equity*, 9(1): 45-62. DOI: <http://dx.doi.org/10.3905/jpe.2005.605370#sthash.26bZNNPS.dpuf>
- Read, S., Song, M. & Smit, W. (2009). A meta-analytic review of effectuation and venture performance. *Journal of Business Venturing*, 24(6): 573-587. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2008.02.005>
- Read, S. & Sarasvathy, S.D. (2012). Co-creating a course ahead from the intersection of service-dominant logic and effectuation. *Marketing Theory*, 12: 225-229. DOI: <http://dx.doi.org/10.1177/1470593112444381>
- Read, S., Sarasvathy, S.D., Dew, N., Wiltbank, R. & Ohlsson, A-V. (2011). *Effectual Entrepreneurship*. New York, NY, USA: Routledge.

- Resick, C.J., Giberson, T.R., Dickson, M.W., Wynne, K.T. & Bajdo, L.M. (2013). Person-Organization Fit, Organizational Citizenship and Social-Cognitive Motivational Mechanisms. In A.L. Kristof-Brown & J. Billsberry (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 99-123.
- Rostgaard Evald, M. & Senderovitz, M. (2013). Exploring internal corporate venturing in SMEs: effectuation at work in a new context. *Journal of Enterprising Culture*, 21(3): 275-299. DOI: <http://dx.doi.org/10.1142/S021849581350012X>
- Sarasvathy, S.D. & Dew, N. (2005). New market creation through transformation. *Journal of Evolutionary Economics*, 15: 533-565. DOI: <http://dx.doi.org/10.1007/s00191-005-0264-x>
- Sarasvathy, S.D. (2001). Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency. *Academy of Management Review*, 28: 43-263. DOI: <http://dx.doi.org/10.5465/AMR.2001.4378020>
- Sarasvathy, S.D. (2003). Entrepreneurship as a science of the artificial. *Journal of Economic Psychology*, 24: 203-230. DOI: [http://dx.doi.org/10.1016/S0167-4870\(02\)00203-9](http://dx.doi.org/10.1016/S0167-4870(02)00203-9)
- Sarasvathy, S.D. (2008). *Effectuation: Elements of Entrepreneurial Expertise (New Horizons of Entrepreneurship)*. Northampton, MA, USA: Edward Elgar Publishing.
- Sarasvathy, S.D. & Dew, N., 2005. New market creation through transformation. *Journal of Evolutionary Economics*, 15, 533–565.
- Sarasvathy, S.D., Dew, N., Read, S. & Wiltbank, R. (2008). Designing Organizations that Design Environments: Lessons from Entrepreneurial Expertise. *Organization Studies*, 29(3): 331-350. DOI: <http://dx.doi.org/10.1177/0170840607088017>
- Sarasvathy, S.D., 2003. Entrepreneurship as a science of the artificial. *Journal of Economic Psychology* 24: 203–230.
- Shepherd, D.A. (2003). Learning from Business Failure: Propositions of Grief Recovery for the Self-Employed. *Academy of Management Review*, 28(2): 318-328.
- Spinoza, C., Flores, F. & Dreyfus, H.L. (1997). *Disclosing New Worlds. Entrepreneurship, democratic action, and the cultivation of solidarity*. Cambridge, MA, USA: The MIT Press.
- Teece, D.J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13): 1319-1350. DOI: <http://dx.doi.org/10.1177/0170840607088153>
- Turner, K.L., Makhija, M.V. (2006). The Role of Organizational Controls in Managing Knowledge. *Academy of Management Review*, 31(1): 197-217. DOI: <http://dx.doi.org/10.5465/AMR.2006.19379631>
- Vargo, S.L. & Lusch, R.F. (2004) Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, 68(1): 1-17. DOI: <http://dx.doi.org/10.1509/jmkg.68.1.1.24036>
- Venkataraman, S., Sarasvathy, S.D., Dew, N. & Forster, W.R. (2011) Reflections on the 2010 AMR decade award: Whither the promise? Moving forward with entrepreneurship as a science of the artificial. *Academy of Management Review*, 37: 21-33. DOI: <http://dx.doi.org/10.5465/amr.2011.0079>

- Verquer, M.L., Beehr, T.A. & Wagner, S.H. (2003). A meta-analysis of relations between person-organization fit and work attitudes. *Journal of Vocational Behavior*, 63(3): 473-489. DOI: [http://dx.doi.org/10.1016/S0001-8791\(02\)00036-2](http://dx.doi.org/10.1016/S0001-8791(02)00036-2)
- Wang, S., Guidice, R.M., Tansky, J.W. & Wang, Z-M. (2010). When R&D Spending Is Not Enough: The Critical Role Of Culture When You Really Want To Innovate. *Human Resource Management*, 49(4): 767-792. DOI: <http://dx.doi.org/10.1002/hrm.20365>
- Weick, K.E. (1969). *The Social Psychology of Organizing*. Topics in Social Psychology. Reading, MA, USA: Addison-Wesley Publishing.
- Wheeler, A.R., Halbesleben, J.R.B. & Shanine, K. (2013). Exploring the Middle-Range of Person-Environment Fit Theories through a Conservation of Resources Perspective. In: A.L. Kristof-Brown & J. Billsberry (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 170-194.
- Wiltbank, R., Dew, N., Read, S. & Sarasvathy, S.D. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27: 981-998. DOI: <http://dx.doi.org/10.1002/smj.555>
- Wiltbank, R., Read, S., Dew, N. & Sarasvathy, S.D. (2009). Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24(2): 116-133. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2007.11.004>
- Yu, K.Y.T. (2013). A Motivational Model of Person-Environment Fit: Psychological Motives as Drivers of Change. In: A.L. Kristof-Brown & J. Billsberry (Eds.), *Organizational fit. Key Issues and New Directions*. Chichester, UK: Wiley-Blackwell, pp. 21-49.