EGOS 2016 Conference Paper:

The academic discourse of innovation and the self-reinforcing circle: A research framework

Sub-theme 24: Innovating towards Sustainable Organizations: The Role of Power, Dependence and Stakeholder Expectations.
EGOS - Conference Naples 2016

Segercrantz, Beata
Affiliation: University of Helsinki
Address: University of Helsinki, Swedish School of Social Science, P.O. Box 16, 00014 University of Helsinki, Finland
E-mail: beata.segercrantz[at]helsinki.fi

Sveiby, Karl-Erik (corresponding author)
Affiliation: Hanken School of Economics
Address: Hanken School of Economics, P.O. Box 479, 00101 Helsinki, Finland
E-mail: karl-erik.sveiby[at]hanken.fi

Berglund, Karin
Affiliation: Stockholm Business School, University of Stockholm
Address: Stockholm Business School, University of Stockholm, SE-106 91 Stockholm, Sweden
E-mail: karin.berglund[at]sbs.su.se

ABSTRACT

Using Schumpeter's concept 'creative destruction' as the starting point, we approach innovation as a discursive terrain where discourses compete to ascribe meanings to innovation. We conduct a discourse analysis of the most influential management articles to explore the dominant academic management discourse of innovation. The analysis shows that the dominant academic management discourse energizes an accelerating, self-reinforcing circle, which focuses on creating organizational benefits while only hinting at the destructive effects. Such effects propagate through organizations/society, sometimes re-creating what was positive in one context as something undesirable in another. We argue that the destruction aspect of the self-reinforcing circle is under-researched in management studies. The paper provides a research framework that interconnects competing discourses of innovation by broadening the scope to include the societal systemic and destructive effects of the self-reinforcing circle. We suggest that a research framework that includes innovation towards sustainable organisations needs to be integrating into the dominant management discourse of innovation in order to transform how firms think about innovation, future growth paths and how to organize for that.

INTRODUCTION

Innovation is in many contemporary economies understood as a key driver of desirable long-term economic and social development (Fagerberg, 2005). OECD and EU have, respectively, in their recent strategies emphasized that innovation is essential for the recovery from the global financial crises that began around 2008. In this vein, scholarly debates of innovation in management studies are almost exclusively occupied with attempts to improve, refine and manage innovation in more economically efficient ways (e.g., Chesbrough, 2010; Cohen & Levintahl, 1990; Lee & al., 2012).

Innovation literature tends to rely heavily on Schumpeterian economics and his view of capitalism as a 'form or method of economic change' (Schumpeter, 1942, p. 81-83), which incessantly creates its economic structure anew 'from within', and simultaneously destroys the old in a cyclic behaviour he calls 'creative destruction'. The cyclic behaviour has expanded into what has been named 'innovation's virtuous circle': 'a strong feed-back loop from successful innovation to increased R&D activities' (Freeman, 1986, p. 213). The self-reinforcing circle has since then been at the core of several innovation-related theories (e.g., Cohen & Levinthal,

1990), which emphasize the virtuous aspects of innovation that drive profit and growth. However, the destructive forces have not gained the same amount of attention although there are exceptions (e.g., Baumol, 1996; Spencer & Kirchhoff, 2008; Gillon, 1986; Schlich & Tröhler, 2006; Todd, 2001; Frame & White, 2004; Krugman, 2007; Archibugi, Filippetti & Frenz, 2013; Mazzucato, 2013). Innovation management debates hence generally tend to be pro-innovation biased, assuming that innovation is always beneficial for organizations (Downs & Mohr, 1976; Kimberly, 1981; Rogers, 1983; Abrahamson 1991) and – generally implicitly – for society as a whole. Society it is typically seen to benefit from the innovations that emerge on the market (for example, Lee, Olson & Trimi, 2012).

Far from limiting his theory on innovation to a firm-industry concept in the economic area, Schumpeter, however, observed (1942, p. 135) that the destructive forces cause unemployment, social unrest and transform 'attitudes of the public mind and policies', because society is an 'indivisible whole' (Schumpeter, 1911, p. 1). While efforts to enhance the beneficial effects for organisations are important, our article, hence, points to the unexploited opportunity that lies in exploring the destruction aspect of the self-reinforcing cycle, in particular its effects outside the economic sphere. Some efforts have been made in this direction (Abrahamson, 1991; Rogers, 1983), but we argue that there is important work still to be done in this field. We therefore conduct a discourse analysis of the most influential academic management articles on innovation. Our aim is to advance management literature of innovation, by providing a framework for problematizing and broadening dominant understandings of innovation.

As our methodological approach we adopt discourse analysis to study how innovation is regarded in innovation management research. We approach innovation as a social construction 'produced and made real through discourses' and show how innovation 'cannot be fully understood without reference to the discourses that give them [innovation(s)] meaning' (Phillips & Hardy, 2002, p. 3). In contrast to content analysis, discourse analysis provides an opportunity to interrogate the content through a second round of questions. While paying attention to content we also ask: How is innovation constructed as positive? Why is it constructed in this way? What are the implications? We pose these questions from a discursive perspective as discourse analysis is an effective, well established, methodology used in management literature to study how social phenomena are constructed (see, e.g, Mabey, 2013), but seldom used to analyse academic discourses (see, exception, Ahl, 2006) or innovation research (see, exception, Perren & Sapsed, 2013), and, as far as we know, never before in an

analysis of innovation research. Through this analytical exercise we contribute methodologically to a critically informed research on innovation.

The paper is structured as follows. First, we discuss innovation as a discursive terrain and describe our methodology. We then conduct an analysis showing how innovation emerges through three discourses: acceleration, self-regulation and faith, which are underpinned by a fourth discourse of threat of destruction. The analysis is followed by a discussion of the linkages between the four discourses, where we show how their interplay energizes in powerful ways a self-reinforcing circle of innovation. We then develop a research framework that interconnects the dominant discourses with a set of nine questions that represent marginalized perspectives in management research and which conceptualize the circle in new ways. Finally, we discuss the implications of our proposition and draw conclusions.

A DISCOURSE ANALYTICAL APPROACH TO INNOVATION

Innovation research, as any research in social sciences, produces particular assumptions of the future, business, society, politics, the economy and the individual, all of which influence research questions asked, choice of methods, theories related to and findings (Calás, Smircich and Bourne 2009). Further, each field of research has foundational texts, which scholars must relate to, whether agreeing or objecting, and which help shape the research field and objectives. The writing and publishing practices of innovation research and its institutional support, are hence of relevance since they enable and restrain the conduct of research.

In relation to this, we engage in an analytical exercise around innovation in which discourse plays a central role. Discourse can and has been studied in various ways and on different levels (Phillips & Oswick, 2012). We understand discourse as interconnected and structured collections of texts (e.g, written or spoken utterances) and as processes that produce and diffuse these texts (Parker, 1992; Phillips & Hardy, 2002). We view the discursive production of texts as practices that bring objects, such as innovation, into being, but also as practices that deconstruct and/or silence understandings. Innovation is hence not seen as a ‘natural observable fact’, but as a contingent, historical and contextual social construction that is constantly being produced, reproduced and transformed but also as a phenomenon constructing reality (Berger & Luckmann, 1966) with political effects (Foucault, 1971). Discourse and materiality are thus tightly intertwined (Phillips & Oswick, 2012).

Through a discourse analysis we draw attention to the production of discourses of innovation in high impact articles in the academic management literature. In the outset of the study we put emphasis on this data material and issues arising from it in order to be as open as possible to different constructions of innovation. Gradually during the analysis we move towards a more critical and problematizing account. We analyse what discourses that are at play and how these contribute in powerful ways to the meanings ascribed to innovation. We are not only interested in what is done (or not done) with innovation and how innovation is theorized (Gee & Handford, 2012), but also in the material effects produced through discourse. This means that we are interested in taken for granted meanings that have been stabilized in this terrain.

Selection of articles

For reasons of diversity, transparency and availability we used Web of Science (WoS) and its Social Science Citation Index database (SSCI) core collection category 'management', comprising 185 journals at the time of our literature search in October 2015. We chose the 1986-2014 period for both publication and citations. The WoS search yielded 7050 articles with innovat* in *title* comprising 173 624 citations. The selection of articles for our discourse analysis from this list was then made in the three following steps:

1. A corpus of text of the 200 most inferential articles based on citation counts, generated by the WoS Citation Report was made. Research impact was calculated based on *total number of citations* per article, *normalised citation impact index* (NCII) and *relative citation rate* (RCR).
2. We then ranked all articles in the corpus of text based on an unweighted average of the three indicators, then selected the 150 highest ranked articles to represent the dominant academic discourse of innovation in management literature. We excluded literature reviews and articles, where innovation was not central. Compensations for the shortfalls were added from the text corpus in ranking order.
3. Finally, we read all the 150 abstracts. To select articles for the discourse analysis we first selected the 25 highest ranked articles. We excluded articles aimed at practitioners, then discussed and manually selected articles to achieve a selection that mirrored the topics covered in the abstracts. The final number of articles to analyse was 32 (see Appendix A).

The five highest ranked articles in our selection remain the most influential irrespective of ranking method and period; despite the exponential growth a very small group of articles is highly influential also today; 18 of our selected articles are still, 2010-2014, among the 25 highest ranked in pure citation count. Although validity, in discourse analysis, is seldom discussed since it is grounded in a constructionist ontology, these two notes indicate that the texts analysed are still of relevance for current scholarly discussions.

Reading the material

Based on a pilot study, a reading of previous innovation research reviews and the abstract analysis, we developed a set of questions (Ahl, 2006) and a form to be filled with answers for each article and distributed the 32 articles among the authors. The questions we posed to the material were:

1. What is the reason behind the problem that the article attempts to solve?
2. How is innovation described?
3. What is innovation compared and contrasted to?
4. What can be innovative?
5. What influences and/or drives innovation?
6. What does innovation lead to?

The first reading was discussed among all authors and tentative themes were extensively explored during a two-day seminar, followed by an analysis where four major themes (drivers, practice, effects, and threat) were identified. The first two authors then did a second reading of all the articles and conducted the discourse analysis with the third author functioning as reader and critique provider. In this process each of the three themes were linked to a function – drivers to acceleration, practice to self-regulation and effects to faith in the innovation. These functions came to label the discourses we recognized as central in management literature.

ANALYSIS: DISCURSIVE CONSTRUCTIONS OF INNOVATION IN MANAGEMENT LITERATURE

Our analysis shows that the archetypical theorizing of innovation tends to emphasize a need to facilitate, enhance and improve innovation or to remove barriers. For example, Amabile (1988, p. 123) examines 'factors influencing creativity and innovation in organizations', Cohen and Levinthal (1990, p. 128) explores how 'the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends is critical to its innovative capabilities', and Chesbrough (2010) 'explores the barriers to business model innovation'.

The typical article addresses a gap in extant innovation research, and maintains that specific studies contribute to more/improved innovation (see, e.g., Brown & Duguid, 1991; Eisenhardt & Tabrizi, 1995; Tsai, 2001; Cassiman & Veugelers, 2006), better/faster implementation/diffusion of innovation (see, e.g, Abrahamson, 1991; Klein & Sorra, 1996), and/or better understanding how innovation works in unexplored or underexplored contexts (Van de Vrande & al., 2009).

The article then attempts to develop models or alike to drive/manage/regulate innovation and finally provides prescriptions. These should lead to success for the innovating organization in terms of various benefits such as, profit, growth or survival. Further, although a process perspective dominates the discussion, innovation is mainly seen as a product and typically as something 'technical' that is to be managed (e.g., Henderson & Clark, 1990; Cassiman & Veugelers, 2006). Regardless of the kind of success that is awaited, innovation is, at worst, expected to continue and, at its best, to increase and multiply. As Teece (2010, p. 186) claims technological innovation is typically lionized. This positive hegemony of innovation is generally taken for granted and rarely debated (Abrahamson, 1991), even if there are exceptions highlighting that the scope of innovation research needs to be broadened (Van de Vrande & al., 2009).

The archetypical theorizing of innovation touches upon a variety of different themes, which could be categorized in many ways. Given the evolutionary assumptions inherent in the concept of innovation, the archetypical article's process perspective and our analysis we wish to draw attention to how *drivers* of innovation, *practices* of innovation and *effects* of innovation are discussed in management literature. The focus is on discourses of innovation adopted and

constructed in academic management literature. It must be emphasized that although we discuss drivers, practices and effects of innovation separately, they are tightly intertwined. For analytical reasons we discuss the three discourses separately, but will at the end of the paper return to the issue of their interconnectedness.

Constructing Drivers of Innovation – Discourse of Acceleration

Anderson et al. (2004, p. 159) argue, 'innovation studies have almost exclusively treated innovation as the dependent variable upon which other 'predictor' variables have been regressed'. This is consistent with our analysis. The focus of the articles analyzed is on how to increase the innovation rate (Stuart, 2000; Tsai, 2001), how to generate higher R&D intensity (Cohen & Levinthal, 1990; Powell & al., 1996; Cassiman & Veugelers, 2006), acceleration of adaptive processes (Damanpour, 1991; Eisenhardt & Tabrizi, 1995), and improvements in the new product success rate (Dougherty, 1992), opening up to for a constant process of technology exploitation and exploration to speed up innovation (Van de Vrande & al., 2009) or 'innovation performance' in general (Cassiman & Veugelers, 2006). Alternatively, the search is for drivers that 'accelerate growth rates' in sales (Stuart, 2000), or just a decision to study an industry that is characterized by a much faster rate of technological innovation (Henderson & Clark 1990). We hence find that issues around acceleration dominate in the construction of drivers in the articles analyzed.

A wide variety of drivers is proposed in the articles. They can be classified as *intra-organizational drivers* and *extra-organizational drivers;* as accelerating innovation or as barriers to the drivers. The only exception is open innovation articles that stand out as they combine the two types of drivers thus presenting a more complex view of what drives innovation (Lee & al., 2012; Van de Vrande & al., 2009).

Table 1. Drivers of innovation.

	Citations: Drivers / Acceleration	**Citations: Barriers / Deceleration**
Intra-organizational drivers	In this paper we probed fast product innovation and, in so doing, attempted to contribute not only to the product innovation literature but also to the beginning of an outline of fast, adaptive organizational processes and, ultimately, organizational forms that fit with competitive, fast-paced situations. (Eisenhardt & Tabrizi, 1995, p. 108) If their internal communities have a reasonable degree of autonomy and independence from the dominant world view, large organizations might actually accelerate innovation. (Brown & Duguid, 1991, p. 54)	Two interpretive schemes are found to inhibit development of technology-market knowledge: departmental thought worlds and organizational product routines. … The potential barriers these interpretive schemes may become need to be dealt with specifically and in depth. This study suggests three intermediary processes which together can help overcome the barriers. (Dougherty, 1992, p. 179, 195)
Extra-organizational drivers	The result suggests that high absorptive capacity is associated with a better chance to successfully apply new knowledge toward commercial ends, producing more innovations and better business performance. (Tsai, 2001, p. 1003) Thus, success in innovation will depend not only on combining various innovation activities, but also on creating the right context. (Cassiman & Veugelers, 2006, p.80)	A lack of trust between the parties, difficulties in relinquishing control, the complexity of a joint project, and differential ability to learn new skills are all barriers to effective collaboration. (Powell & al. 1996, p. 117)

As exemplified in Table 1, studies conducted from the perspective of intra-organizational drivers search for individual or employee characteristics, such as creativity (Amabile, 1988; Eisenberger & al., 1990), diversity (Bantel & Jackson, 1989), problem-solving (Van de Ven, 1986; Eisenhardt & Tabrizi, 1995; Etzkowitz & Leydesdorff, 2000), affective responses (Agarwal & Prasad, 1998), absorptive capacity (Cohen & Levinthal, 1990), or adaptation (Eisenhardt & Tabrizi, 1995). Organizational or group level drivers are: types of organizations (Dewar & Dutton, 1986; Damanpour, 1991), leadership, experimentation and effectuation (Chesbrough, 2010), team compositions (Bantel & Jackson, 1989), R&D (Cohen & Levinthal, 1990), ideas (Scott & Bruce, 1994), contextual variables (Cassiman & Veugelers, 2006), technology brokering (Hargadon & Sutton, 1997), institutional procedures (Subramanian &

Youndt, 2005), the organization's climate (Klein & Sorra, 1996), knowledge resources (Dewar & Dutton, 1986) and particular interpretive schemes (Dougherty, 1992).

Scholars taking an interest in extra-organizational drivers study how the organizations' external environment may accelerate innovation, for example, various networks (Ahuja, 2000) or the position in the network (Tsai, 2001), alliances (Stuart, 2000), competitors, lead users or prominent actors (Laursen & Salter, 2006; Stuart, 2000), suppliers and universities (Laursen & Salter, 2006), competitors and strategies (Henderson & Clarke, 1990), innovation systems (Etzkowitz & Leydesdorff, 2000), internationalization (Hitt & al., 1997), and fads and fashions (Abrahamson, 1991). Innovation is also discussed as a system of institutional drivers, stating that innovation is a topic of national concern (Etzkowitz & Leydesdorff, 2000), and also of global interest since it is at the heart of global competition (Bantel and Jackson, 1989).

Recently, studies of open innovation have argued for the need to embrace both intra and extra organizational drivers. Here complexity of the different drivers is seen to propel innovation in unexpected ways (Van de Vrande & al., 2009) whereby innovation becomes less of a specific practice and more of a universal approach of co-creation and boundary dissolution (Lee & al., 2012).

Factors that may decelerate innovation are often formulated in the articles analyzed as the opposite of the proposed positive drivers and/or factors using the prefix 'non-' 'not-' or concepts with negative connotations, such as, 'barriers', lack', or 'resistance', which need to be removed or expressions. A few intra-organizational examples are: non-innovators (Laursen & Salter, 2006), Not-Invented-Here syndrome (Cohen & Levinthal, 1990; Laursen & Salter, 2006; Cassiman & Veugelers, 2006), pathology (Cohen & Levinthal, 1990), barriers to effective collaboration (Powell & al., 1996), barriers to knowledge transfer (Tsai, 2001), interpretive barriers (Dougherty, 1992), barriers to business model innovation (Chesbrough, 2010; Teece, 2010), lack of investment in absorptive capacity (Cohen & Levinthal, 1990), lack of management understanding (Klein & Sorra, 1996), lack of openness to their external environment (Laursen & Salter, 2006), lack of communication, resources and information (Eisenhardt & Tabrizi, 1995), lack of ties (Hargadon & Sutton, 1997), laggards' resistance (Abrahamson, 1991), and employee resistance (Klein & Sorra, 1996). Decelerating external factors are less frequent. Two examples are government regulation (Abrahamson, 1991;

Etzkowitz & Leydesdorff, 2000; Hitt & al., 1997), and inefficient collaborations (Powell & al., 1996).

Although extra-organizational drivers are recognized and innovation is viewed as important for national and global communities, the distinction between the organization and its outer environment dislocates the outer environment. It is acknowledged, but becomes marginalized; positioned in the periphery or is completely absent. When mentioned, the environment is 'scanned' (Dougherty, 1992) from the perspective of the organization only or seen in the role of provider of resources for innovation (Cohen & Levinthal, 1990; Laursen & Salter, 2006), or influencing the firm's innovative or profit-generating capabilities (Subramanian & Youndt, 2005; Teece, 1986). Caution is brought up, since the environment is 'unclear and changing' and 'dynamic' (Eisenhardt & Tabrizi, 1995), or the outer environment (global world) is seen to benefit from the innovations that are created at the market (Lee & al., 2012).

Van de Ven (1986, p.599) however, argues that the innovator needs to scan the environment and to place critical dimensions of the whole environment into the innovating unit. Although he claims that the 'currently more popular, design [of the innovation process] is the customer or need-driven model', customers are up until early 2000's typically viewed as relatively passive rather than drivers of innovation, for instance, clients or customers are seen as sources of information for innovation and the organization (Klein & Sorra, 1996; Laursen & Salter, 2006), to be 'tapped' (Cassiman & Veugelers, 2006).

A shift in literature occurs with the introduction of the concept of open innovation where stakeholder, citizen and employee participation (also non-R&D experts) becomes valuable (e.g., Van de Vrande & al., 2009). In this process innovation is opened up in a wish for democratization – to involve different groups in the process of creating the new. In this turn innovation is indeed opened up as a co-creation process that is seen to be 'universal' for every organization (Lee & al., 2012).

In sum a search for drivers of innovation dominate. In fact, all 32 analyzed articles discussed either how to drive innovation or how to overcome hinders. With some exaggeration, the most influential innovation research seems to argue that 'there are (already) innovations, but more innovations are incessantly needed to foster new innovations'. We will return to this self-referential feature later, because innovation becomes, itself, a moving target changing the

landscape not only of organizations but also of nations and the global community, which, in turn, impose change on the organization. A discourse of exponential change, *acceleration*, thus constitutes a central discursive thread in innovation management literature.

Constructing Practices of Innovation – Discourse of Self-regulation

The discourse of acceleration places organizations in situations of risk of failure and disorder. On the one hand, innovation is desired, since it is paramount with regard to the life of the organization. On the other hand, many, if not most, innovations are not commercially successful (Teece, 2010). Our analysis shows that management studies of innovation place strong emphasis on innovation processes as processes that need to be managed, from the generation of ideas (Van de Ven, 1986) to diffusion and adoption (Abrahamson, 1991; Agarwal & Prasad, 1998; Teece, 2010). This is perhaps not surprising, since our analysis focuses on management studies. However, what is of interest here is *how* the analyzed articles attempt to manage innovation for its own good and purpose.

The range that requires management attention is wide in the articles analyzed – we list only a fraction here: personal innovativeness (Agarwal & Prasad, 1998) and creativity (Amabile, 1988), structures and networks (Doughert, 1989; Ahuja, 2000), diversity in top management teams (Bantel & Jackson, 1989), working, learning and innovating (Cohen & Levinthal, 1990; Brown & Duguid, 1991), absorptive capacity (Cohen & Levinthal, 1990) or knowledge and human capital (Dewar & Dutton, 1986; Cohen & Levinthal, 1990). Furthermore, various scholars (Chesbrough, 2010; Teece, 2010) argue that it is not enough for firms to have efficient practices for exploring new ideas, firms must also invest sufficiently in innovating business models through which new innovations pass and generate profit. By drawing attention to specific issues and by claiming that these are in need of management, much management literature attempts to measure and produce prescriptions of successful innovation or, in contrast, highlight the more spontaneous or disordered side of innovation, as illustrated in Table 2.

Table 2. Practices of innovation.

Practices	Citations
Regulating and constructing measures and prescriptive models	We formulate a model of firm investment in research and development (R&D), in which R&D contributes to a firm's absorptive capacity, and test predictions relating a firm's investment in R&D to the knowledge underlying technical change within an industry. (Cohen & Levinthal, 1990, p. 128) The purpose of this paper is to propose a new constructs that further illuminates the relationships explicit in the technology acceptance models, and to describe an operational measure for this construct that possesses desirable psychometric properties. (Agarwal & Prasad, 1998, p. 204) Therefore, innovation management requires a tight integration of internal and external knowledge within the firm's innovation process to capture the positive effects each innovative activity has on the marginal return of the other. (Cassiman & Veugelers, 2006, p.80)
The non-controllable (e.g., creativity)	Individual creativity is the most crucial element of organizational innovation, but it is not, by itself, sufficient. And features of the organization can be the most crucial determinants of an individual's creativity at any point in time. (Amabile, 1988, p. 125) They [open source programmers] retain private benefits from their work process such as learning and enjoyment, and they gain benefits associated with community participation as well. (von Hippel & von Krogh 2003 p. 217). Our findings are that employees' general perception of being valued and cared about by the organization is positively related to … innovation on behalf of the organization in the absence of anticipated direct reward of personal recognition. (Eisenberger & al., 1990, p. 57)

As in the extracts in Table 2, most of the studies analyzed attempt to construct measures of innovation (e.g, Cohen & Levinthal, 1990; Henderson & Clark, 1990; Scott & Bruce, 1994; Klein & Sorra, 1996; Powell & al., 1996; Agarwal & Prasad, 1998; Stuart, 2000; Tsai 2001; Laursen & Salter, 2006), an issue that has been on the research agenda in particular since the influential Charpie Report (U.S. Department of Commerce, 1967) and Oslo Manual (OECD, 1992, 1997, 2005) emphasized the need for measuring innovation. For example, Agarwal and Prasad (1998) propose a construct with the aim of identifying very early adopters, who will facilitate further diffusion. Stuart (2000) measures an organization's innovativeness using citations of patents. Cassiman and Veugelers (2006) measure 'complementarity' to find instances where 'the marginal return to one activity increases as the intensity of the others increase'.

The studies that measure innovation practices also often produce prescriptive accounts, the 'ideal' and most 'effective' practices to drive. Agarwal and Prasad (1998) point to how their findings can be used 'to more effectively guide the availability of information channels'. Cohen and Levinthal (1990) claim that their results can be used for the 'prescriptive analysis of organizational policies'. Teece (2010) argues that business models are crucial for how firms organize and commercialize technological achievements to generate profit. He offers suggestions regarding efficient business model characteristics. Moreover, our analysis illustrates how management articles discuss practices of innovation in terms of producing the most desirable outcomes for the innovating firm.

Although issues of regulation dominate in the construction of innovation practices, innovation is also discursively constructed as a spontaneous problem-solving capability (Eisenberger & al., 1990). The apparently non-controllable (creativity, experimentation, flexibility and spontaneity) is found to generate innovations (e.g., Amabile, 1988; Chesbrough, 2010; Eisenberger & al., 1990; Teece, 2010). Thus, there is a tension here: measuring and regulating innovation may be counterproductive in the sense that it 'kills' creativity and spontaneity.

Van de Ven (1986, p. 591) crystallizes the tension between regulation and disorder by arguing that institutional leadership is required in order to 'put the whole into the parts'. Management must 'embrace uncertainty' by 'maintaining balance among innovative subunits' (Van de Ven, 1986, p. 603-604). In short, how to manage innovation is to both to regulate disorder and to embrace it. Some authors even claim that their proposed construct does precisely that: absorptive capacity is 'what gives rise to creativity' (Cohen & Levinthal, 1990, p. 130), or; 'Good innovation-values' plus 'strong implementation climate' will 'produce skilful and consistent innovation use' (Klein & Sorra, 1996, p. 1065), or; 'open source software development […] contains elements of both the [regulated] private investment and the [non-regulated] collective action model and can offer society "the best of both worlds"…' (von Hippel's & von Krogh 2003, p. 209).

In sum, the construction of management practices of innovation are dominated by the tension between regulation and disorder. The analysed articles develop measures and prescribe best practises to manage the tension in order for the innovating organization to grow, innovate more and increase its profit. The focus is hence the regulation of the organisation itself. Also when the focus is on relations outside the organization, as in open innovation and absorptive capacity,

the aim is to improve the benefits for the innovating organization. By restricting itself to organisational self-regulation the discourse pays little or no attention to regulating effects *beyond* the organization. Thus the analysis illustrates how the construction of practices is underpinned by a discourse of self-regulation that celebrates self-interest.

Constructing Effects of Innovation - Discourse of Faith

'Few issues are characterized by as much agreement as the role of innovation and entrepreneurship for social and economic development' (Van de Ven 1986, p. 590). Our analysis confirms this argument: the analysed articles typically take for granted that the role of innovation is always 'good', and hence the effects of innovation are only given marginal attention.

Despite the scant empirical research on the effects of innovation in the literature analyzed, there is broad agreement about the benefits for the innovating firm: (1) improved organizational survival and/or competitive advantage, (2) increased economic benefits for the innovating firm, and (3) a faster pace of change and novelty in general (see Table 3).

Table 3. Effects of innovation.

Effects	**Citations** (emphasis added to highlight how effects of innovation are constructed)
Organizational survival or competitiveness	As the organizational utilization of information technology proliferates, and as technology becomes more critical for **competitive survival**, the importance of the technology acceptance problem escalates; systems that are not accepted by their intended users will not result in any **sought-after benefits**. (Agarwal & Prasad, 1998, p. 204) Business model innovation can itself be a pathway to **competitive advantage** if the model is sufficiently differentiated and hard to replicate for incumbents and new entrants alike. (Teece, 2010, 173) Our entire world is undergoing transformation. In this rapidly changing and often unpredictable environment, innovation is the imperative key factor for organizations to develop **competitiveness** and **succeed** in the market. (Lee & al., 2012, p. 818)
Economic benefits for the organization	The first finding is that the **commercial success** of a new product depends on how well the product's design meets customers' needs … The second finding is that collaboration among the technical, marketing, manufacturing, and sales departments contributes to a new **product's success.** (Dougherty, 1992, p. 179) … the organization's culture must find ways to embrace the new model, while maintaining the effectiveness of the current business model until the new one is ready to take over completely. Only in this way can business model innovation help companies escape the 'trap' of their earlier business models, and renew **growth** and **profits**. (Chesbrough, 2010, 362) Such innovative suggestions are important to the organization's **growth** and **success.** (Eisenberger & al., 1990, p. 57)
Faster change and novelty	The adoption of innovation is generally intended to contribute to the **performance** or **effectiveness** of the adopting organization. Innovation is a means of **changing** an organization ... (Damanpour, 1991, p. 555) … organizational units can produce **more innovations** and enjoy better performance if they occupy central network positions. (Tsai, 2001, p. 996)

Specific examples of effects of innovation mentioned in the articles analyzed are: better organizational performance (Abrahamson, 1991; Damanpour, 1991; Tsai, 2001); innovation and learning (Cohen & Levinthal, 1990) and 'sought after benefits' (Agarwal & Prasad 1998); higher productivity and competitive performance (Cassiman & Veugelers, 2006; Klein & Sorra, 1996); higher sales growth (Powell & al., 1996); more profit for the innovating firm (Chesbrough, 2010; Dougherty, 1992; von Hippel, 1994; Teece, 2010; Teece, 1986); a higher return on equity and assets (Subramanian & Youndt, 2005); competitive advantage or survival

(Amabile, 1988; Henderson & Clarke, 1990; Agarwal & Prasad, 1998; Teece, 2010); growth (Bantel & Jackson, 1989); organizational change (Damanpour, 1991); novel technological processes (Dewar & Dutton, 1986); meeting customer demands and keeping up with customers (van de Vrande & al., 2009); and coming to grips with how to succeed on the market in a world of globalization and transformation (Lee & al., 2012).

The benefactor of the beneficial effects is always the innovating firm, whereas customer/user benefits and desirable 'non-economic benefits' at societal level are marginalized. Thus, our analysis leads us to conclude that effects are constructed through a faith in the goodness of innovation. Innovation is seen as bringing about desirable effects and the preoccupation with desirable effects contributes to a construction of innovation as necessary and even inevitable. Management research seems to have a complete trust and confidence in innovation as a source for desirable effects. The articles analyzed are hence dominated, we argue, by a discourse of faith in the goodness of innovation.

To summarize, the analysis of the effects of innovation that emerges through a discourse of faith shows two important issues. The studied or acknowledged effects in management literature focus on the production of desirable effects for the innovating organization; thus, we wish to highlight the neglect of other desirable and undesirable effects. The other issue is that the articles assume that the more, faster and better the organization innovates, the more desirable effects for the organization can be expected, which in turn will provide the resources to innovate more – the self-reinforcing effect that we discussed above in the section on drivers.

The Production of a Self-reinforcing Circle

Thus far, we have discussed how management literature constructs drivers, practices and effects of innovation. We have shown that the understandings of drivers of innovation are constructed through a discourse of acceleration, practices of innovation are produced by a discourse of self-regulation, and the effects of innovation are created through a discourse of faith. Although we have analyzed the three elements (drivers, practices and effects) separately, they are tightly intertwined. Table 4 illustrates the ways in which drivers, practices and effects of innovation are discursively, dynamically and mutually constituted. The diagonal grey boxes summarize the findings from the analysis and the other boxes illustrate the linkages between the three discourses.

Table 4. Academic management discourses of innovation.

Discourses/ Themes	Acceleration	Self-regulation	Faith
Drivers of innovation	Good drivers accelerate innovation.	It is imperative to regulate drivers.	Faith in the goodness of innovation drives innovation.
Practices of innovation	Effective practices accelerate innovation.	It is imperative to regulate practices of innovation.	Faith in the goodness of innovation creates a desire to invest in more efficient innovation practices.
Effects of innovation	Acceleration leads to more innovation and other organizational benefits.	Regulate / measure the organization's benefits.	Faith leads to complete trust in the goodness of innovation: innovation has desirable effects.

As Table 4 shows, while the discourse of acceleration constructs meanings around drivers of innovation, it also ascribes meaning to practices and effects of innovation. The same can be shown about the discourse of self-regulation and the discourse of faith.

Table 4 also illustrates that assumptions around drivers of innovation are interconnected with expected organizational effects. The discourse of acceleration could thus be argued to be tightly intertwined with the discourse of faith. Moreover, the discourse of faith constructs a complete trust in the goodness of innovation; that is, innovation will guarantee numerous beneficial effects for the organization provided that the organization engages in acceleration and effective practices. What we can see here is that the discourse of acceleration drives a self-reinforcing circle, where the organization has to innovate faster in order to again innovate more and faster. The discourse has self-referring features in that it restricts the focus to the organization and its benefits.

Cohen and Levinthal's (1990, p. 128) seminal article epitomizes the self-reinforcing feature by making it also self-referring. According to the article R&D activities (apart from innovation) also add 'absorptive capacity', defined as 'the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends'. This capacity is critical to its innovative capabilities. Since the theory uses R&D intensity as indicator to operationalize both innovation and absorptive capacity, the same indicator is both driver and effect. In other words, R&D intensity generates innovation and absorptive capacity, while absorptive capacity

enhances R&D intensity. The discourse of self-regulation plays a central part in enabling the self-reinforcing circle of acceleration and faith in the goodness of innovation. The discourse of self-regulation is, as we have seen, an essential element in practices of innovation; it attempts to make innovation 'manageable' so the organization can continue to accelerate innovation and achieve the desired benefits.

Destruction - Discourse of Threat

All three discourses we have described so far, acceleration, self-regulation and faith, focus on fostering the beneficial effects of innovation for the organization. However, a threat of Schumpeterian destruction runs through them all. Acceleration makes innovation growth exponential; the intention is to increase the rate of change, which makes the future a target that moves faster and faster, difficult to grasp, impossible to analytically pin down or to forecast, and with consequences unknown to us. This concern shows itself as an undertone of threat in the acceleration discourse – the threat of destruction unless the wheel keeps turning faster and faster.

The threat is often there, rarely investigated as such or discussed in depth, but many articles make the threat explicit in a few words: '[there are industries, where] only firms that aggressively exploit technical opportunities survive' (Cohen & Levinthal, 1990, p. 138). Sometimes, the article uses threat as a rhetorical starting point: 'America is losing its innovativeness' (Van de Ven 1986, p. 590) or '[t]he central role of innovation in the long-term survival of organizations' (Scott & Bruce 1994, p. 580). Henderson and Clark (1990, p. 9) add that '[s]eemingly minor improvements in technological products can have sometimes disastrous effects on industry incumbents', while Teece (1986, p. 291) tackles the concern head-on: 'Why do innovating firms often fail to obtain significant economic returns from an innovation, while customers, imitators and other industry participants benefit? Profits should go to the patent/IP owner'.

The discourse of threat also underpins the discussions of practices of innovation as innovation scholars warn what might happen if their advice is *not* taken seriously. Cohen and Levinthal (1990) tell organizations that 'to underinvest in absorptive capacity' [is] to their own long-run detriment'. Subramanian and Youndt (2005) warn firms not to neglect the social side of individual skills. Klein and Sorra (1996, p. 1055) argue that 'implementation failure … [is] the

cause of many organizations' inability to achieve the intended benefits of the innovations they adopt'. Teece (1986, p. 304) cautions governments that, 'to fail [to follow his recommendations] will cause an unnecessary large portion of the profits from innovation to flow to imitators and other competitors'. Teece (1986, p. 291) also reminds the readers that '[n]one of the early producers of steam cars survived the early shakeout when the closed body internal combustion engine automobile emerged as the dominant design'.

The discussions of effects of innovation also touch upon the discourse of threat. When the assumption is that organizations must have faith in and engage in innovation, then organizations that do not have that faith are threatened by economic challenges and competitors. For example, Teece (2010, p. 172), who stresses the need for business model innovation, argues that '[w]ithout a well-developed business model, innovators will fail to either deliver – or to capture – value from their innovations'. Therefore, in order for an organization to maintain the self-reinforcing feature of innovation, organizations must avoid or defeat destruction and focus on the drivers of desirable effects.

Moreover, the discourse of threat reminds us of what will happen if the self-reinforcing circle stops. The threat easily turns into a powerful driver, which accelerates its pace. It hence draws on similar assumptions as Schumpeter regarding destruction. The threat of destruction is a positive driver which destroys the old inefficient structures and paves the way for the new modes of production. The discourse of threat reminds the organization of what will happen if it does not belong to those who are included in the new structure.

Open innovation appears at first sight to go against the dominant approaches by offering a broader concept of innovation. However, what remains unproblematized in the open innovation literature is the pro-innovation bias. Innovation is exemplified as something that may combat warfare, while not being linked to the very production of warfare (Lee et al., 2012). So, although innovation is broadened, embracing other contexts (SME´s and other types of organizations as NGO´s and government agencies), collaboration and social engagement it is still underpinned by a discourse of threat; the threat of not being able to invent solutions that may come to grips with the wicked problems that links to the notion of society. Hence, when innovation is opened up, the threat multiplies and makes the faith of innovation even stronger. It basically becomes a question of life and death.

To conclude, Schumpeterian assumptions of destruction run through all three discourses of innovation and within all three themes that we have distinguished: drivers, practices and effects (see Table 4). Whilst the creative side of innovation often is explicitly highlighted and discussed in the articles analyzed, the discourse of threat emerges 'in-between the lines'. This implies that the discourse of threat reinforces the understanding that innovations need to be managed. 'The threat' can hence be seen as a 'stable signifier' in discourse, which has become so stable that its contingency has been 'frozen', and has thus gained a more objective status in the discourse of innovation (Laclau, 1990), through which it produces a number of 'truth effects'.

DISCUSSION:
PROBLEMATIZING THE SELF-REINFORCING CIRCLE OF INNOVATION

As our analysis shows, management research has made no, or only limited, efforts to understand and/or deal with the force of the self-reinforcing circle, being instead occupied with acceleration and self-regulation. The consequence is that the self-reinforcing circle accelerates within itself. Innovation is constructed as inevitable, given and positive, thus making it nearly impossible to question innovation[1]. This in turn contributes to a broad neglect of drivers, practices and effects beyond those of immediate concern for (business) organizations outside the circle.

The self-reinforcing feature is highly problematic, because unfettered positive feedback loops have been shown in economic theory to generate systemic risks, the risk that they amplify or generate effects on other levels in a system (for example, Arnold, 2009; Crotty, 2009; Obstfeld & Rogoff, 2009). A successful innovation in a commercial sense is consequently very difficult to 'undiffuse' if undesirable consequences are discovered (McGrath & Zell, 2001), hence a 'system with an unchecked positive loop [will] ultimately destroy itself' (Meadows, 1997, p. 11). Systems theory therefore suggests negative feedback loops for addressing problems emerging from positive feedback loops.

[1] The complete trust in the goodness of innovation is actually a relatively new construction. It is only since the mid-20th century that the understanding of innovation has changed radically towards positive meanings, pushing the creative power of innovation to the centre stage as an effective means for promoting agendas, shaping new innovative identities, and achieving political and social goals (Godin, 2012). During the last century, the innovation discourse has been stabilized through producing a division between opportunity and threat.

As shown in this paper discourse can provide an important arena for challenging the constraints of the circle. By showing how innovation is constituted by discourse, our analysis opens up the effects of positive feedback loops for critical reflection: what such loops promote (a pro-innovation bias and certain drivers and practices) and consequently also ignore, marginalize and/or silence (destruction and effects of innovation, for example, at the level of society). Our analysis also suggests that by challenging the discourse of faith, management studies can broaden pro-innovation biased research to also include the effects and consequences of innovation outside the organization. By also critically scrutinizing the discourse of acceleration, management studies may turn attention to what innovation leads to or make innovation the independent variable in empirical studies, thus loosening up the strong and one-sided focus on drivers. By approaching the discourse of self-regulation in new ways, management studies has the opportunity to turn the focus onto the system structure, 'the whole', and promote more diverse voices and effects beyond the pure organizational benefits of profit and growth. A stronger focus on these types of issues would contribute important debates around innovation. We have designed a set of research questions aimed at assisting such research in Table 5.

Table 5. Questions for reflection and redirecting the self-reinforcing circle.

Discourses / Themes	**Discourse of Acceleration**	**Discourse of Self-Regulation**	**Discourse of Faith**
Drivers of innovation	What does innovation drive?	What drivers are not controlled and not controllable?	What drivers are promoted if the faith in the goodness of innovation is rejected?
Practices of innovation	What effects do accelerated practices have?	What practices embrace pluralism and diverse voices?	What practices reduce non-beneficial effects outside the organization?
Effects of innovation	What are the non-beneficial effects of accelerated innovation?	How can unanticipated effects outside the organization be controlled?	What are the consequences and effects of innovation outside organization?

We suggest that these types of questions are to be used in both research and practice to address problematic and extra-organizational destructive aspects of the self-reinforcing circle. The questions above are not intended as specific research questions, but rather as perspectives which also address the destructive side of innovation. Together and/or separately, the perspectives push researchers to explore what innovation leads to beyond the immediate economic interests of organizations. They facilitate a rejection of the pro-innovation bias in order to extend research agendas to also include the destruction component, such as the undesirable effects of innovation and opportunities to reduce them. This, we suggest, has the potential for conceptualizing the self-reinforcing circle in new ways and for pushing analyses and theorizing

of innovation forward by giving voice to questions that represent marginalized perspectives in management research rather than maintaining the self-reinforcing circle.

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

We have engaged in an analytical and theoretical exercise in which innovation is seen as a discursive terrain where discourses are competing to ascribe specific meanings to innovation. The focus of the exercise has been the destruction component in Schumpeter's concept 'creative destruction' and how it contributes to the discursive construction of innovation in a selection of the most influential management literature of innovation. Drawing on discourse analysis we theorized four discourses: acceleration, self-regulation, faith, and threat. We showed that these dominant academic management discourses of innovation concentrate on creation and energize an accelerating, self-reinforcing circle that is primarily focused on organizational benefits and only hints at the destructive side of innovation. We also have proposed a set of alternative perspectives for research (Table 5).

Management literature thus explores primarily what Schumpeter (1911) calls the economic sphere while leaving effects in other spheres of society under-researched. The neglected destructive side may bring about systemic effects, which propagate through organizations and society, sometimes re-creating what was positive in one context in society as something undesirable and inefficient in another context. By analysing how the discourses around innovation emerge, construct specific meanings, and turn attention away from destruction outside the economic sphere, the article theorizes innovation in a nuanced way and provides alternatives that challenge the prevailing understandings of innovation analyzed in this study. The study hence illustrate a more general conclusion and proposition: that theorizing innovation as a discursive terrain can contribute new perspectives for theorizing in and around innovation in a wider variety of contexts. We suggest that there are several unexplored opportunities for research due to the current narrow and taken-for-granted assumptions around Schumpeterian creative destruction. The benefits of exploring these assumptions could be considerable due to innovation's unique position in the economic system and its powerful capacity to produce change with a wide range of effects and indirect systemic consequences.

Our analysis has some limitations. The focus on high impact management articles is one. On the one hand, management literature is becoming the dominant voice in studies of innovation

(Bhupatriraju 2012; Shafique 2013). On the other hand, several emerging thin discursive threads are appearing in management literature: *eco-innovation* (including terms such as *environment, sustainability* and *'green'*) and *responsible (research* and*) innovation* (for example, Sharma & Lee, 2012; Guthey, Whiteman & Elmes, 2014). These are resonances of major, fast growing discourses, beyond the scope of this paper. Our methodology, discourse analysis, is as far as we know the first discursive review of innovation management literature and thus our paper provides a methodological contribution. The analysis gives depth and insight into the dynamics of the discursive production of innovation. However, compared to traditional literature reviews it sacrifices breadth, which may be seen as a limitation considering the great variety of innovation literature. Finally, the outcome of the analysis is a construction dependent on the interest of the authors; other discourses could be constructed.

The limitations point to the need for further research. Are the self-reinforcing and self-regulating features of the dominant management of innovation discourse repeated in other innovation discourses, for instance in the eco-innovation discourse; in economics; in science and technology studies, etc? Since our analysis is limited to the management of innovation discourse, we suggest that future research problematizes biases inherent in other innovation discourses. One way to move forward could be to use the concept of innovation's self-reinforcing circle as a boundary object. Finally, we hope that we have demonstrated the usefulness of drawing on discourse analysis in such endeavours.

REFERENCES

Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory and Practice, 30*(5), 595-621.

Archibugi, D., Filippetti, A., & Frenz, M. (2013). Economic crisis and innovation: Is destruction prevailing over accumulation?. *Research Policy, 42*, 303-314.

Arnold, P. J. (2009). Global financial crisis: the challenge to accounting research. *Accounting, Organizations and Society, 34*, 803-809.

Baumol, W. J. (1996). Entrepreneurship: Productive, unproductive, and destructive. *Journal of Business Venturing, 11*(1), 3-22.

Berger, P. L., & Luckmann, T. (1966). *The social construction of reality*. New York: Doubleday.

Bhupatiraju, S., Nomaler, Ö., Triulzi, G., & Verspagen, B. (2012). Knowledge flows – Analyzing the core literature of innovation, entrepreneurship and science and technology studies. *Research Policy, 41,* 1205-1218.

Calás, M. B., Smircich, L., & Bourne, K. A. (2009). Extending the boundaries: Reframing "entrepreneurship as social change" through feminist perspectives. *Academy of Management Review, 34,* 552-569.

Crotty, J. (2009). Structural causes of the global financial crisis: a critical assessment of the 'new financial architecture. *Cambridge Journal of Economics, 33,* 563-580.

Downs, G. W., & Mohr, L. B. (1976). Conceptual issues in the study of innovations. *Administrative Science Quarterly, 21,* 700–714.

Foucault, Michel (1971/1993). *Diskursens ordning* [l'ordre du discours]. Stockholm: Brutus Östlings Bokförlag.

Frame, W. S., & White, L. J. (2004). Empirical studies of financial innovation: lots of talk, little action? *Journal of Economic Literature,* 42(1), 116-144.

Freeman, C. (1986). *The economics of industrial innovation*. London: Pinter.

Gee, J. P., & Handford, M. (2012). Introduction. In Gee, J. P. & Handford, M. (Eds.), *The Routledge handbook of discourse analysis* (pp. 1-6). Routledge.

Gillon, R. (1986). The principle of double effect and medical ethics. *British Medical Journal, 292*(6514), 193-194.

Godin, B. (2012). An old word for a new world, or the de-constestation of a political and contested concept. In Sveiby, K.-E., Gripenberg, P. & Segercrantz, B. (Eds.), *Challenging the innovation paradigm* (pp. 37-60). London: Routledge,

Guthey, G. T., Whiteman, G., & Elmes, M. (2014). Place and sense of place: implications for organizational studies of sustainability. *Journal of Management Inquiry, 23*(3), 254-265.

Kimberly, J. R. (1981). Managerial innovation. In Nystrom, P. C. and Starbuck, W. H. (Eds.), *Handbook of Organizational Design* (pp. 84-104). New York: Oxford University Press.

Krugman P. (2007, December). Innovating our way to financial crisis. *New York Times column*.

Laclau, Ernesto (1990). *New reflections on the revolution of our time*. London: Verso.

Mabey, C. (2013). Leadership development in organizations: Multiple discourses and diverse practice. *International Journal of Management Reviews, 15,* 359-380.

Mazzucato, M. (2013). Financing innovation: creative destruction vs. destructive creation. *Industrial and Corporate Change, 22,* 851-867.

McGrath, C., & Zell, D. (2001). The future of innovation diffusion research and its implications for management a conversation with Everett Rogers. *Journal of Management Inquiry*, *10*(4), 386-391.

Meadows, D. (1999). Leverage points: Places to intervene in a system. Available at: http://www.donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/ (accessed 21 December 2014).

Obstfeld, M., & Rogoff, K. S. (2009). *Global imbalances and the financial crisis: Products of common causes*. London: Centre for Economic Policy Research.

OECD. (1992; 1997 2nd ed; 2005 3rd ed). *Oslo manual*. Paris: OECD publications.

Parker, I. (1992). *Discourse dynamics*. London: Routledge.

Perren, L., & Sapsed, J. (2013). Innovation as politics: The rise and reshaping of innovation in UK parliamentary discourse 1960–2005. *Research Policy*, *42*(10), 1815-1828.

Phillips, N., & Hardy, C. (2002). D*iscourse analysis. Investigating processes of social construction*. California: Sage Publications.

Phillips, N., & Oswick, C. (2012). Organizational discourse: Domains, debates, and directions. *The Academy of Management Annals*, *6*, 435-481.

Rogers, E. (1983). M.(1983). *Diffusion of innovations*. New York.

Schlich, T., & Tröhler, U. (Eds.) (2006). *The risks of medical innovation: risk perception and assessment in historical context*. Psychology Press.

Schumpeter, J. A. (1911). *Theorie der wirtschaftlichen Entwicklung*, 1st edn. Leipzig: Duncker & Humblot.

Schumpeter, J. A. (1942). *Capitalism, socialism and democracy*. New York: Taylor & Francis (paperback edition 2003).

Shafique, M. (2013). Thinking inside the box? Intellectual structure of the knowledge base of innovation research (1988–2008). *Strategic Management Journal*, 34, 62-93.

Sharma, A., & Lee, M. D. P. (2012). Sustainable global enterprise perspectives of Stuart Hart, Ans Kolk, Sanjay Sharma, & Sandra Waddock. *Journal of Management Inquiry*, *21*(2), 161-178.

Spencer, A. S., Kirchhoff, B. A., & White, C. (2008). Entrepreneurship, innovation, and wealth distribution the essence of creative destruction. *International Small Business Journal, 26*, 9-26.

Todd, S. (2001). The effects of securitization on consumer mortgage costs. *Real Estate Economics, 29*, 29-54.

Appendix A. Articles included in the discourse analysis

Articles included in the discourse analysis
Abrahamson, E. (1991). Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review, 16*, 586-612.
Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research, 9,* 204-215.
Ahuja, G. (2000). Collaboration networks, structural holes, and innovation: A longitudinal study. *Administrative Science Quarterly, 45*, 425-455.
Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior, 10*, 123-167.
Bantel, K. A. & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference?. *Strategic Management Journal, 10*, 107-124.
Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science, 2*, 40-57.
Cassiman, B., & Veugelers, R. (2006). In search of complementarity in innovation strategy: Internal R&D and external knowledge acquisition. *Management science, 52*(1), 68-82.
Chesbrough, H. (2010). Business model innovation: opportunities and barriers. *Long range planning, 43*(2), 354-363.
Cohen, W. M., & Levinthal, D. A. (1990). Absorptive-capacity: A new perspective on learning and innovation. *Administrative Science Quarterly, 35*, 128-152.
Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal, 34*, 555-590.
Dewar, R. D., & Dutton, J. E. (1986). The adoption of radical and incremental innovations: an empirical analysis. *Management Science, 32*, 1422-1433.
Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. *Organization Science, 3*, 179-202.
Eisenberger, R., Fasolo, P., & Davislamastro, V. (1990). Perceived organizational support and employee diligence, commitment, and innovation. *Journal of Applied Psychology, 75*, 51-59.
Eisenhardt, K. M., & Tabrizi, B. N. (1995). Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly, 40*, 84-110.

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and "mode 2" to a triple helix of university-industry-government relations. *Research Policy, 29*, 109-123.

Hargadon, A., & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly, 42*, 716-749.

Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly, 35*, 9-30.

Hitt, M. A., Hoskisson, R. E., & Kim, H. (1997). International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal, 40*, 767-798.

Klein, K. J., & Sorra, J. S. (1996). The challenge of innovation implementation. *Academy of Management Review, 21*, 1055-1080.

Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal, 27*, 131-150.

Lee, S. M., Olson, D. L., & Trimi, S. (2012). Co-innovation: convergenomics, collaboration, and co-creation for organizational values. *Management Decision, 50*(5), 817-831.

Powell, W. W., Koput, K. W., & SmithDoerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly, 41*, 116-145.

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal, 37*, 580-607.

Stuart, T. E. (2000). Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry. *Strategic Management Journal, 21*, 791-811.

Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal, 48*, 450-463.

Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public-policy. *Research Policy, 15*, 285-305.

Teece, D. J. (2010). Business models, business strategy and innovation. *Long range planning, 43*(2), 172-194.

Tsai, W. P. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of Management Journal, 44*, 996-1004.
Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science, 32*, 590-607.
Van de Vrande, V., De Jong, J. P., Vanhaverbeke, W., & De Rochemont, M. (2009). Open innovation in SMEs: Trends, motives and management challenges. *Technovation, 29*(6), 423-437.
Von Hippel, E. (1994). “Sticky information” and the locus of problem solving: implications for innovation. *Management science, 40*(4), 429-439.
von Hippel, E., & von Krogh, G. (2003). Open source software and the "private-collective" innovation model: Issues for organization science. *Organization Science, 14*, 209-223.