

FRÉDÉRIK C. WITTE

When Employees Leap to Self-Employment: Do Business Ideas, Occupations and Policy Matter?

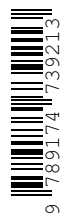
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What is the most important problem facing employees in the modern economy once they come up with a new business idea? Maybe it is the decision whether or not to leap into self-employment.

Frédéric's work allows us to consider how business ideas, occupation, and policy affect the transition decision to leap from paid employment to self-employment. It also allows us to consider how different quantitative methods (laboratory experiments, multilevel survival models, data mining) may inform research on self-employment entry.

Frédéric's supervisors are Frédéric Delmar and Simon C. Parker.



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When Employees Leap to Self-Employment

Do Business Ideas, Occupations and Policy
Matter?

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Chapter 1

Introduction

Why Do People Quit Their Jobs? Because They Can.

Problem: Good Jobs Are Scarce. Solution: Become Your Own Boss.

Go on, Leave Your Job.

— *Headlines from The New York Times (1998, 2005, 2008)*

Every dissertation, I suppose, has at an intended reader who can benefit from its message. The target, here, is a 40-year old engineer called Diane Ricci, she is a mother of two, and thinks about starting a business. Diane is working full-time for E.ON, and she came up with a new business idea during her last work assignment.

Before she decides whether or not to enter, she wants to gain a better understanding about the determinants of self-employment entry. She understands that the transition from paid employment to self-employment is a rare event. Most employees refrain from self-employment entry, and aim for a corporate career instead. She also understands that self-employment entry is a decision that is made under ambiguity, where two possible states of the world—business success and business failure—are known, but the probability of each state occurring is unknown. Her limited knowledge leads Diane to the following question: “Why do some employees pursue a business idea, and take the leap to self-employment?—Are they smarter, or better informed, than those who do not enter?”

Diane is not the only person who is interested in self-employment entry. The headlines from the New York Times illustrate the importance of the ongoing self-employment entry discussion.

Employees, firms and policy makers are interested in understanding the mobility process between paid employment and self-employment. Employees, as potential entrants, are interested in whether they should forgo their wages and salaries to pursue a business idea. Firms are vested in retaining their best talent, and want to understand when and how employees make the decision to leave the firm and take the leap to self-employment. Policy makers are concerned with increasing economic welfare, including temporary subsidies for new entrants, and want to understand under what conditions subsidies will support the introduction of high quality entrepreneurial firms and founders.

The conversation about the determinants of self-employment entry is timely, relevant and useful. The dissertation contributes to this conversation. In four papers, I examine how business ideas, occupations, research policy, and public policy impact self-employment entry. The concept of business ideas is defined as “the possibility to establish a new combination” (Schumpeter 1912)¹; occupations are “repositories of skill” (Siegel 1971); research policy denotes “statistical learning techniques used to ‘learn from the data’ ” (Hastie et al. 2005); and, public policy stands for “temporary subsidies to foster ‘productive entrepreneurship’ ” (Baumol 1990).

I start from the observation that people spend most of their professional lives in paid employment, and that they, as employees, observe the mobility within and between established firms. In addition to traditional career transitions from one employment to the next, employees can choose to quit their jobs, and enter into self-employment. At every decision node, an employee chooses to (i) stay employed in the same firm, (ii) choose another form of paid employment, or (iii) enter into self-employment. The dissertation addresses the latter: the direct transition from paid employment to self-employment, measured by the primary source of income. This transition is unique from an economic point of view, as employees willingly exchange a stable income flow (with social benefits) for an irregular income flow and a skewed income distribution (without social benefits).

¹ “[D]ie Möglichkeit, ‘eine neue Kombination durchzusetzen’ ” (1912, p. 427).

I want to persuade the reader that employees who enter into self-employment are rare, but they are not necessarily exceptional. We can explain why some employees pursue a given business idea, and choose self-employment, without assuming that they are smarter, or better informed, than those who stay in paid employment.

Previous studies assume that employees are different from each other, and ask “How do these differences originate, and how do they determine self-employment entry?” The dissertation uses a different starting point. Instead of explaining the heterogeneity of self-employment entry by individual-level differences, I assume that employees who enter are just as good as those who do not enter. In economics jargon: The dissertation explains the heterogeneity of self-employment entry, without assuming that decision makers are heterogenous.

Since individual-level differences do not exist by assumption, each employee is an Average Joe, a man without qualities, defined as someone who possesses no individual-level characteristics that distinguish him from his peers.² But all of this does not hinder the Average Joe to leap into self-employment. Employees without distinctive qualities may enter into self-employment, while most of their peers (with the same qualities) choose to stay in paid employment.

The dissertation presents an entry model, showing that only two assumptions are necessary to explain the heterogeneity of self-employment entry. We only need to assume that new business ideas occur at random, and that a sorting mechanism persists on the labor market. For each employee, the business idea determines the expected utility of entry, and the sorting mechanism determines the opportunity cost of entry. The business idea shapes the expected profit of self-employment (either through the outcome n , or the probability of outcome n occurring), and the labor market shapes the cost of forgoing the second-best option—the wage of full-time employment—by structuring the returns from paid employment.

²In the dissertation, I follow the “Guidelines for the Nonsexist Use of Language” unless it leads to misunderstandings or unnecessary clutter, as suggested by Warren (1986). The term “Average Joe” represents one of those exceptions, and I refrain from using the tedious “Average Joe/ Average Jane” construction. The male term “Average Joe” refers to both males and females. Another exception is the term “man without qualities”, which is an homage to Robert Musil’s unfinished novel, and therefore does not allow any changes without losing its message. The attentive reader will find additional references to major works in literature hidden the dissertation. Happy hunting!

Both assumptions are reasonable, and go back to Schumpeter, who writes “[employees] generate a lot of ideas almost automatically” (1912, p. 163).³, as well as Phelps, who writes “picture the economy as a group of islands between which information flows are costly” (1970, p. 6). The two assumptions, put homogenous employees into different contexts, and it’s the incentive structure of this context that shapes their decision to enter into self-employment.

The change in focus, of course, does not mean that there are no individual-level differences between people in general. A claim of this sort would be preposterous; people are different from one another. Still, it’s not clear whether the differences are relevant determinants of self-employment entry (Low and MacMillan 1988, Busenitz and Barney 1997).

The data show that entry decisions are dependent on business ideas and occupations. This constitutes the empirical novelty of the dissertation, and supports the theoretical model. Controlling for individual-level effects (either through randomization in the experiment, or through statistical controls in the multilevel survival model), the likelihood and type of self-employment entry depends on business ideas and occupations. The likelihood of incorporated entry, for example, tends to be more similar for employees from the same occupation than for employees from different occupations (e.g., engineers–lawyers). Since self-employment entry is dependent on business ideas and occupations, it can be captured in a model, and we can use this model to test hypotheses and make predictions.

The data also show that research policy, and public policy, matter for self-employment entry. Supervised learning techniques, and a theoretical model, reveal that both types of policy determine how we measure, test, and promote self-employment entry.

The Introduction details the main idea (the heterogeneity of self-employment entry can be explained without assuming heterogenous decision makers), and the remainder of the dissertation translates it into three empirical studies, and one theoretical paper.

³:[E]ine Menge Ideen suggerieren sich ihnen wie von selbst.’

Executive Summary

The dissertation puts homogenous employees into context, and studies the transition from paid employment to self-employment. Controlling for individual-level effects, it shows that self-employment entry is dependent on business ideas and occupations. Occupational choice is, therefore, reformulated in a way which eliminates its present dependence on the special treatment of individual-level differences, including opportunity recognition, entrepreneurship-specific human capital, and personal traits, to explain why some employees leap into self-employment and others do not.

The dissertation contributes a novel idea (the observed heterogeneity of self-employment entry can be explained, even if we assume that decision makers are homogenous), and looks at an established research question in a new way, where I use a definition of self-employment entry that is more narrow (the direct transition from paid employment to self-employment, measured by the primary source of income), than has been used in previous studies.

Motivation

In 1990, in the bright era of America's booming economy, William Baumol published the essay "Entrepreneurship: Productive, Unproductive, and Destructive", which foresaw a much gloomier future—one where flawed policy leads to the misallocation of entrepreneurship to "unproductive activities such as rent seeking and organized crime." Compared with the other Boom-era papers on entrepreneurship, like Aldrich (1990), Gartner (1990), and Katz and Gartner (1988), his paper is pessimistic in its prediction, and gloomy in its tone; yet still, it's considered to be one of the most important contributions to entrepreneurship research today (see Shane 2003, chapter 7).

Baumol's Assumption. Baumol starts from a new assumption: the total supply of entrepreneurs is fixed, including productive, unproductive, and destructive activities. He argues that policy makers, rather than trying to influence the total supply of entrepreneurs, should strive towards allocating the fixed supply to "productive activities such as innovation." Baumol later develops this idea into the "Microtheory of Innovative Entrepreneurship", and writes:

[E]ntrepreneurs do not appear suddenly from nowhere or, just as mysteriously, vanish. Rather, entrepreneurs are always with us, but as the structure of the rewards offered in the economy changes, entrepreneurs switch the locus of their activity, moving into arenas where the payoff prospects are most attractive. (2010, p. 55)

People move in and out of self-employment, depending on the incentive structure of the economy.

The Incentive Structure and Its Enemies. For Baumol, labor market transitions are the causal effect of economic incentives systematically guiding people’s behavior. The incentive structure shapes the anticipated reward of self-employment relative to paid employment, and determines whether or not employees will leap into self-employment (Baumol 1990).

Baumol does not deny that individual-level differences exist between employees, but he stresses the importance of economic incentives, rather than the psychological determinants of self-employment (Baumol 2010). The single most important determinant of self-employment entry is the structure of incentives in the economy; it’s not the entrepreneurship-specific human capital (collected either through experience (Ucbasaran et al. 2008), or through genetic disposition (Nicolaou et al. 2008)). (For an extensive review of this literature, see Baum et al. 2007).

Baumol’s theory goes beyond the “nature–nurture” debate in the economics of entrepreneurship. It clarifies that self-employment entry is a rare event not by nature or by nurture, as it’s often claimed, but by design of the incentive structure (Baumol 1990).

Baumol’s Contribution. Baumol’s contribution is outstanding for several reasons. It starts from a new assumption—the supply of entrepreneurs is fixed—that until today has not been refuted.

His contribution also shows that research on self-employment entry is at the heart of economics. The British economist, Lionel Robbins defined economics as “the science which studies human behavior as a relationship between ends and scarce means which have alternative uses” (Robbins 2007, p. 15). Baumol expands on this thought,

and shows how alternative uses of effort investment explain the fluctuations in the supply of entrepreneurs. For Baumol, effort investments represent scarce means, and their ends are determined by the incentive structure of the economy in which employees are nested (Baumol 1990). We can follow his example to explain “Why do some employees leap into self-employment and others do not?” Instead of looking at individual-level differences, we have to understand “How employees, who are nested in different incentive structures, evaluate the alternative uses of their effort investment?”

Together with Casson (1982), Baumol is the first author in the economics of entrepreneurship who provides a coherent argument for the context-dependence of self-employment entry. He uses a novel assumption (the total supply of entrepreneurs is fixed) to explain the importance of the incentive structure for individual-level entry decisions, and firmly lodges the debate at the heart of economics.

His “Microtheory” (2010) represents a thoughtful response to Scott Shane’s “Specific Areas in Greatest Need of Investigation” (see Shane 2003, chapter 11). Shane argues that the sources of heterogeneity in opportunity exploitation are currently understudied (cf. Casson 2005); for instance, is self-employment entry a product of nature or of nurture? Baumol’s simple response is that differences between individuals, and changes over time, originate from the incentive structure in the economy. Rather than studying individual-level differences, and their effects on entry, researchers should focus on the incentive structure in the economy that determines entry behavior.

How I Use Baumol. Baumol’s paper is a source of motivation, because it led me to think about the different settings that could bring about a fixed supply of entrepreneurs, while simultaneously producing the observed heterogeneity in the rate of self-employment entry. More precisely, a pattern that systematically changes over time, and accounts for the rare occurrence and varying quality of self-employment entry.

In Baumol’s model, there is only one incentive structure shaping the entire labor market (Baumol 1990). I develop this idea further. In my model, the labor market is a collection of smaller sub-markets, and each sub-market has a different incentive structure. Baumol’s idea (the incentive structure determines self-employment entry)

is still at work, only its application is different.

The dissertation also follows his example in taking an unusual premise as its starting point. My assumption: Employees who are leaping into self-employment possess the same individual-level characteristics as those who stay in paid employment. Instead of assuming that employees are different, and asking “How do these differences determine self-employment entry?”, I assume that individual-level differences (between those who stay and those who enter) do not exist. The assumption is partially supported by several empirical papers (Busenitz and Barney 1997, Caliendo et al. 2011, Low and MacMillan 1988, Townsend et al. 2010). Once we accept that there are no individual-level differences, how can we explain the heterogeneity of self-employment entry? If everyone’s cognitive processes, human capital, and endowments are basically the same, then why are some people so much more likely to enter into self-employment than others?

In the dissertation, I find that only one setting satisfies Baumol’s criterion, and at the same time explains the observed heterogeneity of self-employment entry. It’s a combination of two types of rules. Using the term from research on artificial intelligence (Clancey 1983, Davis 1980, Kulkarni and Simon 1988, Simon 1959), it’s the combination of a “plain rule” that guides behavior, and a “meta rule” that modifies the plain rule. Before detailing the two rules, I discuss the basic model setup that is necessary to explain the heterogeneity of self-employment entry.

A Simple Model

To explain the main idea of the dissertation (the heterogeneity of self-employment entry can be explained without assuming heterogenous decision makers), I present a simple model.

Step 1. Consider an economy, where all people are working for one established firm (the incumbent), and where employees want to become self-employed if they have a business idea that is of “good enough” quality. Now, assume that business ideas occur at random to employees, and that the quality of the business idea is also random. Both assumptions are a direct consequence of our starting point that there are no individual-level differences between the employees.

The result of this thought experiment can be easily derived from its assumptions. If we assume that only few business ideas are good enough, than self-employment entry is rare, and the pattern is stable over time (granted that the period of observation is long enough). In other words, it's not difficult to devise a setting where the occurrence of self-employment entry is rare, we only need to assume that employees are "picky".

This model, however, is too simple to explain the heterogeneity of self-employment entry, and suffers from two problems: the rate of self-employment entry is fixed over time, and only good ideas will see the light of day.

Step 2. To include fluctuations and mediocre ideas in our model of self-employment entry, let's introduce three additional assumptions. We assume that all employees are sorted into two different sub-groups, called occupation *A* and occupation *B*. There are frictions hindering employees to move between the occupations, and the "pickiness" to enter into self-employment is occupation-specific.

The entry pattern of this model is less obvious, but it can also be derived if we take it step-by-step. First, there are two different occupations that generate entries into self-employment, and compared to the previous model, we will see more entries if the pickiness of occupation *B* is lower than of occupation *A* (the pickiness of occupation *A* did not change from the previous model). As a result, we see more self-employment entries, and the quality of the average business idea will be lower compared to the previous setting. The model now includes the possible occurrence of mediocre business ideas. Please note, that we still assume that there are no individual-level differences between the employees, and that the variation in the quality of the business ideas is solely explained by between-occupation differences.

To include fluctuations in the probability of entry, we only have to assume that employees can move (between occupation *A* and occupation *B*), while some frictions persist. If this assumption is fulfilled, the rate of self-employment entry varies over time depending on the number of employees in each occupation. If the number of employees in occupation *B* increases, the quality of business ideas, on average, decreases, and more entries are generated, because employees who are nested in occupation *B* are less picky than those nested in occupation *A*.

Unfortunately, the existence of the two distinct occupations is hidden in the data, because the employees of occupation B can have business ideas that are of equal or better quality than the business ideas of those in occupation A . For researchers observing only the self-employment entry rate, it's not apparent that the heterogeneity of entry is generated by two distinct sub-groups in the population. On top of that, we include only good and mediocre business ideas, bad ideas are still excluded from our model.

Intermediate Step – Plain Rule and Meta Rule. The previous steps show that the rate of self-employment entry can be rare and varying over time, even if we assume that there are no individual-level differences between the employees. For the following discussion, it's important that only the entry rate into self-employment, and not the pickiness to enter, is dependent on the number of employees in the occupation. The employee's pickiness to enter remains independent from the size of the occupation, and there is no labor market competition. To include some variation within the occupations, I now revisit the two rules: the plain-rule guides choice behavior, and the meta-rule modifies the plain rule (Clancey 1983, Davis 1980).

Choosing the plain rule is not difficult, since it's one of the basic tenets of the economics of entrepreneurship. The plain rule is: "Individuals will switch from self-employment to wage work if the expected utility of self-employment exceeds the expected utility of wage work" (Evans and Leighton 1989, p. 525).⁴ Apart from the amusing faux pas in the sentence construction, Evans and Leighton (1989) rightfully claim that the expected utility of self-employment drives entry. In our simple model, the expected utility is solely determined by the quality of the business idea. Employees, who have a (randomly occurring) business idea, take the leap to self-employment only if the idea is good enough. Stated differently, employees leap into self-employment, if the expected utility of the business idea is larger than the expected utility of staying in paid employment.

The development of the meta rule is less obvious, and I had to conduct a laboratory experiment (Paper 1, in Appendix A) to confirm my intuition that the pickiness to enter actually depends on the business idea. After randomly assigning participants

⁴This quote is taken word-by-word from the *American Economic Review*.

in two groups, those who created their own idea (compared to those who received an idea from the experimenter) also chose a more skewed payoff distribution.⁵ The meta rule is: “If ‘I’ came up with the business idea, I subsequently accept ‘more’ variable payoffs”. Since, in our simple model, payoffs are solely determined by the quality of the business idea, the meta-rule is tantamount to an expected utility premium for self-employment.

Employees who come up with their own business idea are more likely to choose self-employment entry, because business ideas systematically affect the preference for skew. This line of thought is supported by experimental research on other regarding preferences (Cooper and Kagel Forthcoming, Åstebro et al. 2014), and recent findings from behavioral economics, where non-monetary benefits, like seeing one’s brain child come to life, influence the choice behavior of economic agents (Blanco et al. 2011, Engelmann and Strobel 2004, Gächter et al. 2012).

Combining the plain rule—“enter to maximize utility”—with the meta rule—“add a utility premium to own ideas”—creates an intriguing component for our model. The meta rule, supported by experimental evidence, modifies the plain rule, which is a generally accepted assumption in the economics of entrepreneurship. In combination, the two rules guide the choice behavior of the employee who comes up with a business idea. The next step is to include the two rules in our simple model.

Step 3. The simple model accounts for self-employment entry as a rare event (Step 1), and for the variation in the occurrence and quality of entry (Step 2). The main limitation, so far, is that we cannot explain the existence of bad business ideas (only good and mediocre ideas), and that the simple notion of pickiness does not allow us to explain within-occupation variation. To do so, I replace “pickiness” by the “plain and

⁵There is an interesting paper to be written about the use of different terms for “people” in the different domains of economics. Theorists, for example, refer to people as “agents”; experimental economists used the term “subjects” until it was decided—by a formal majority-voting process during the *Annual Experimental Economics Conference*—to replace the term subjects with “participants”; microeconomists, especially those interested in game theory, use the term “player” or “decision maker”. Now, relativists might use the difference (how economists refer to people) as evidence that the different streams within economics have an incommensurable outlook on economic action. In contrast, I follow Baumol (1993b), who argues that disagreement about definitions and the use of terms scarcely matters in research practice. The definitions are “complementary rather than competitive, each seeking to focus attention on some different feature of the same phenomenon” (Baumol 1993b, p. 198).

meta rule”, and argue that employees will leap into self-employment, if the business idea is good enough in terms of expected utility.

To explain the existence of bad business ideas, I further assume that employees from all occupations can communicate their business ideas under two conditions. First, the employees communicate their ideas to others, if they do not use it themselves to enter into self-employment. Second, the lines of communication are open only between occupation A and the new occupation C —where the expected utility of paid employment is low, and where there are very few employees.⁶

As a result, employees nested in occupation A (the picky occupation with the high opportunity cost), who possess business ideas that are not good enough (i.e., ideas that do not create a positive marginal utility of self-employment entry in occupation A), will communicate their ideas to employees in occupation C . For simplicity, and by the design of the simple model, the communication between occupation A and C does not affect the entry behavior of employees in occupation B , and they will enter only with their own ideas.

Model Summary. The simple model is now complete, and explains the heterogeneity of self-employment entry without resorting to individual-level differences.

Overall, the simple model satisfies Baumol’s criterion of a fixed supply of entrepreneurs, since business ideas occur at random. The model also allows self-employment entry to be a rare event, and variations in the actual number and quality of self-employment entries are explained. Whether employees are taking the leap into self-employment depends on the opportunity cost of leaving paid employment, which is determined by the occupation, and the expected utility of self-employment entry, which is determined by the quality of the business idea. The business idea occurs randomly, and whether it involves an expected utility premium depends on whether the employee “had” the business idea or “heard” about it. If the marginal utility of entry is positive, the employee will leap into self-employment. The plain rule uses utility maximization to guide the employee’s entry decision (a basic assumption in

⁶Communicating the business idea to employees within the same occupation does not change the model, since the employees who “hear” about the potential business have the same opportunity cost of entry than the employee who “had” the idea, and they will not enter since they do not have the expected utility premium. I also assume that there is no communication between occupation A and B .

the economics of entrepreneurship), and the meta rule modifies the plain rule, depending on the business idea (as shown in the laboratory experiment, see Appendix A). The two rules also guarantee that the entry decision is context dependent, and that the model is in line with the utility-maximizing assumption of the economics of entrepreneurship (Parker 2004, 2009a).

After building a simple model based on business ideas, I am now interested in the details of the concept. I will study it on two levels: the general level, where I discuss business ideas and entrepreneurship as a research domain; and the specific level, where I highlight the added value of business ideas for the discussion on self-employment entry.

Business Ideas and the Domain of Entrepreneurship

Entrepreneurship research is described as “catchall” (Low 2001), “potpourri” (Davidson et al. 2001), and “hodgepot” (Shane and Venkataraman 2000), and runs the danger of not developing a distinctive domain (Venkataraman 1997). Indeed, whether entrepreneurship research contributes novel insights that other fields are not able to provide is open for debate (Alvarez and Barney 2013, Shane 2012, Venkataraman et al. 2012).

The bordering disciplines of entrepreneurship are economics, management, psychology, and sociology. They are, no doubt, useful to study the transition between paid employment and self-employment. Economists explain the emergence of new firms in markets (Coase 1937, Williamson and Winter 1993); management scholars understand the importance of business opportunities (Barney 1986), independent of whether the opportunities are discovered (Shane 2003), or created (Gartner 1985); psychologists focus on the cognitive processes that lead to employment choices (Busenitz and Barney 1997), including the need for achievement in entrepreneurship McClelland (1961); and, sociologists make sense of the broader social structure in which people are embedded (Granovetter 1985), and understand how the social structure influences the mobility processes in the labor market (Sørensen and Sharkey Forthcoming).

At the intersection between the four bordering disciplines, we, as entrepreneurship

scholars, have to build a distinctive domain of entrepreneurship research (Venkataraman 1997). We should ask ourselves: “What can we bring to the table of social science, that is not already provided by the bordering disciplines?”

Nexus Theory and Creation Theory. To establish entrepreneurship research as a distinctive domain, Shane develops the individual-opportunity nexus, and Alvarez and Barney advance the creation theory, or the resource-based view of entrepreneurial action. Some scholars, Ramoglou (2013) is the most recent example, have reduced the conversation between the two camps to the opportunity debate, where Shane and colleagues claim that “opportunities exist out there in the world and are waiting to be discovered” (Shane 2003, Eckhardt and Shane 2003, Shane 2012), and Alvarez and Barney maintain that researchers should shift their focus “from opportunities themselves to the processes that form and exploit them” (Alvarez and Barney 2007, 2010, Alvarez et al. 2013).

What started as a head-to-head discussion of two camps in entrepreneurship research, resembles today an academic pillow fight, where nobody gets hurt (in terms of academic credibility), everyone gains (in terms of citations), and adversaries soon loose interest. The two theories develop their arguments in separate discussions, without resolving anomalies, and are a monument to the lack of originality in recent entrepreneurship research. In their response to Scott Shane, Alvarez et al. (2013) merely express their “surprise” about Shane’s position in the philosophy of science, rather than presenting anomalies between empirical data and the competing nexus theory, as Popper (1962) would suggest. Alvarez et al. (2013) do not present their creation theory as valuable alternative that can be used to explain anomalies. They only stress the internal consistency of their own model, and try to undermine the philosophical stance of Shane. The approach goes against Popper’s criterion of a positive theory, and even more astonishing, conflicts with their own research. In 2007, Alvarez and Barney already conceded that Shane’s nexus theory is sound and “internally consistent”, including his philosophical stance.

The lesson that I take from the opportunity debate is that both theories are not willing, or able, to resolve anomalies, and that both camps want to establish separate discussions: one about the individual-opportunity nexus, and one about opportunity

creation. Both nexus and creation theory, however, are theories only in a weaker sense, because they do not satisfy Karl Popper's criterion of positive theories in the social sciences (Popper 1959). If we accept Popper's criterion and evaluate theories by testing their predictions against empirical facts (Popper 1959, 1962), then we might have to reject both nexus theory and creation theory as positive theories of entrepreneurship. If we take a more moderate stance, and define theories as "causal explanations providing intelligible answers to why-questions about empirical facts" (cited in Kiser and Hechter 1998, p. 793), then nexus theory and creation theory should be considered as distinct theories. Nexus theory uses opportunity discovery as explanation, and creation theory uses opportunity creation as explanation.

To my mind, the most intelligible way to think about this issue is to use the moderate stance, and complement it with Thomas Kuhn's notion of "general theories".

Among other things they [general theories] supply the group with preferred or permissible analogies and metaphors. By doing so they help to determine what will be accepted as an explanation and as a puzzle-solution; conversely, they assist in the determination of the roster of unsolved puzzles and in the evaluation of the importance of each. (Kuhn 1962, p. 183)

Let's take our puzzle: "Why do some employees leap into self-employment and others do not?" We see that the two camps use different analogies, and different solutions. Shane and his colleagues prefer to think about entrants as exceptional people *ex ante*, and use the concept of Kirznerian alertness to explain the puzzle. Alvarez and Barney, on the other hand, prefer to think about entrants as people acting in an endogenous process, and use Mintzberg's emergent processes to explain why some employees enter and others do not.

Unfortunately, general theories have empirical problems, and tend to focus exclusively on confirming evidence. Quadagno and Knapp (1992), for example, argue that general theories are always at "risk of selecting confirming evidence while ignoring disconfirming evidence" (1992, p. 495). This is one possible explanation for why the head-to-head discussion in the *Academy of Management Review*, did not achieve any kind of convergence between the two theories. It also confirms my reading of the

literature. Many contributions on self-employment entry suffer from a confirmation bias (Nightingale and Coad 2014), looking for individual-level differences without exploring alternative explanations for patterns and trends in the multilevel data.

Today, nexus theory and creation theory have advanced separately, and put particular emphasis on internal consistency, without incorporating beneficial features from the competing theory. They do not use empirical data to resolve anomalies, and do not strengthen the relative position of their own theory by refuting alternative explanations (but I am convinced that Sharon Alvarez and Jay Barney would disagree (see Alvarez et al. 2013)). Shane, as well as his opponents, may argue that Karl Popper’s conceptualization of science—science as an iterative process of anomaly resolution—is designed in such a way that it explains theory shifts over an extended period of time, and that we need to be more patient before judging the current state of entrepreneurship research. I go along with this caveat, and accept that the evaluation of both theories against empirical evidence is still pending. As a passionate student of entrepreneurship research, however, I cannot help but feel disappointed about the lost opportunity to consolidate and advance our understanding of opportunities in the entrepreneurship process. After all, the chance of getting publication space in the *Academy of Management Review* to stage a head-to-head discussion, and challenge our understanding of entrepreneurship, does not come along very often.

This section shows that the opportunity debate is currently in a deadlock. Neither nexus theory, nor creation theory are able to establish a distinctive domain of entrepreneurship research without resorting to individual-level differences. Employees who enter into self-employment are different (from those who stay in paid employment), either ‘ex ante’ (Shane 2003), or through their unique actions in the endogenous process (Alvarez et al. 2013). Both theories do not resolve anomalies, or talk to each other, and if they have the opportunity to talk, as in the head-to-head discussion staged by the *Academy of Management Review*, they fail to deliver consistent arguments against the competing theory.

None of the recent additions to the opportunity debate is able to reconcile the two theories. At the most, researchers argue that nexus theory and creation theory are complementary (Shane 2012, Alvarez and Barney 2013, Eckhardt and Shane 2013), and that there is currently no basis to discuss which theory represents “the real theory

of entrepreneurship” (Alvarez 2005, p. 14). Neither nexus theory, nor creation theory delivers on the promise to establish entrepreneurship as a distinctive research domain (Shane and Venkataraman 2000, Shane 2012, Venkataraman et al. 2012).

To build a positive theory, entrepreneurship researchers may want to abandon the concept of opportunities, or at least rethink it, and start to look for alternative concepts. The Schumpeterian concept of business ideas is one possible alternative to the concept of opportunities, and takes the high road of harmonizing nexus theory and creation theory, to advance entrepreneurship research (see Table 1.1).

Schumpeter’s Concept of Business Ideas. Schumpeter (1912) defines business ideas as “the possibility to establish a new combination.”⁷ In his view, opportunities and business ideas could not be further apart: an opportunity lasts for a very short time until it’s exploited or replaced, but a business idea lasts within the employee who pursues it. Schumpeter writes: “Nothing is harder to change than ideas and dispositions” (1912, p. 528).⁸ Schumpeter does not stop there. He continues his line of argumentation and shows that business ideas are necessary, but not sufficient for self-employment entry. He clearly sees the willingness to invest effort as more important than the business idea. He writes: “Ideas by itself do not have a practical relevance, which is obvious if we consider that all of their prerequisites are subject to rapid change in a dynamic economy” (1912, p. 427).⁹

Business ideas do not replace, but supersede the notion of opportunity discovery and opportunity creation, and, by doing so, harmonize the two separate discussions. In Schumpeter’s own words: “That is why we do not put emphasis on a broader horizon or new ideas, but rather on the energy of actual effort” (1912, p. 128).¹⁰ Stated differently, entrepreneurship is not primarily about “where the business ideas come from” (this probably falls in the domain of psychology and pattern recognition (Shane and Venkataraman 2000)), but it’s about “what people do with business

⁷ “[D]ie Möglichkeit, ‘eine neue Kombination durchzusetzen’ ” (1912, p. 427).

⁸ ‘Nichts ändert sich so schwer als Ideen und Dispositionen’ (1912, p. 528).

⁹ ‘Ideen darüber hinaus haben vorläufig keine praktische Bedeutung, was man um so leichter ein-sieht, wenn man bedenkt, dass sich ja alle ihre Voraussetzungen in einer dynamischen Volkswirtschaft rasch ändern’ (1912, p. 427).

¹⁰ ‘Weshalb wir nicht so sehr auf weiteren Gesichtskreis und neue Ideen Gewicht legen, sondern auf die Energie des tatsächlichen Handelns’ (1912, p. 128).

ideas”.

The domain of entrepreneurship should be structured accordingly, and we should focus our research on the evaluation, development and effect of business ideas, rather than on their creation. The discussion about the source of business ideas becomes a side note, and it’s relevant only in so far as it affects the person’s behavior in the entrepreneurship process.

We see that the separate discussions of opportunity discovery and opportunity creation become one; and then, became nothing under the Schumpeterian concept of business ideas. The change in focus to “what people do with business ideas” is both novel and useful. It harmonizes opportunity discovery and opportunity recognition as necessary, but not sufficient steps in the entrepreneurship process.

Schumpeter Lost in Translation. It’s important, at this point, to discuss some of the differences between Schumpeter’s original work from 1912, and the later translation by the British economist Redvers Opie from 1934.¹¹ One example must stand for many (for a more extensive account on translating Schumpeter, see Becker et al. (2011)). Schumpeter writes:

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Many [employees] among them keep the daily struggle from consuming their strength and vitality, so that they can pursue some of the ideas, and bring them into concrete shape. But that alone is not enough. These people, too, face similar obstacles [compared to those who do not pursue business ideas], and they have to invest effort after choosing their path [paid employment or self-employment], otherwise they are likely to pay their business idea with their economic existence’. (1912, p.163)

To explain why self-employment entry and entrepreneurship is rare, Schumpeter develops the thought of a minimum requirement, where people who do not fulfill

¹¹I would like to thank Hans Landström for giving me access to the rare, first edition “Theorie der wirtschaftlichen Entwicklung”, published by Duncker & Humblot in 1912.

¹²Viele unter ihnen retten sich genügend Frische aus der täglichen Routine, um einzelne dieser Ideen weiter verfolgen zu können und in konkrete Form zu bringen. Aber das allein genügt nicht. Auch für diese Leute gelten ähnliche Hindernisse, auch sie müssen ihre Kraft dem einmal eingeschlagenen Wege widmen, andernfalls können sie ihre Ideen mit ihrer wirtschaftlichen Existenz bezahlen’ (1912, p.163).

Nexus Theory and Creation Theory		How Business Ideas Reconcile Nexus and Creation Theory
Key	N	Opportunities are discovered: they exist out there, and are waiting to be spotted (Shane, 2003).
	C	Opportunities are created: they are formed and exploited (Alvarez and Barney, 2010).
Source	N	Schumpeter (1934) and Kirzner (1973), emphasize the role of discovery and alertness.
	C	Gartner's (1985) entrepreneurship as phenomenon, and Mintzberg's (1985) emergent processes.
Agent	N	Entrepreneurs discover and exploit new resource combinations.
	C	Entrepreneurs create opportunities, and originate new firms.
Task	N	Entrepreneurs need Kirznerian "alertness".
	C	Entrepreneurs need the ability to act in the emergent process.
Domain	N	Entrepreneurship centers around the situation of discovery. That is, "a situation in which a person can create a new means-ends framework" (Shane, 2003, p. 18).
	C	Entrepreneurship revolves around the process of "opportunities that are endogenously enacted by the actions of entrepreneurs" (Alvarez and Barney, 2010, p. 557).

Table 1.1: Business Ideas Reconcile Nexus Theory (N) and Creation Theory (C).

this requirement are less likely to enter. If they do not fulfil the requirement, and still decide enter, they are more likely to pay their business idea with their economic existence.¹³

¹³In the original German, he writes "andernfalls können sie ihre Ideen mit ihrer wirtschaftlichen

Schumpeter (1912) uses the terms “open eyes to see new ideas” (*offene Augen*), and “strength and vitality that is not already consumed by the daily struggle” (*genügend Frische aus der täglichen Routine*) to specify the minimum requirement to successfully pursue a business idea. To become an entrepreneur, he explains, a person has to consider the strength and vitality he or she possesses as a scarce resource, and guard it against the depletion from everyday life. In addition, to the strength and vitality, the person also needs the openness to see possible new combinations.

Unfortunately, the translation by Redvers Opie from 1934 (“The Theory of Economic Development”) that made Schumpeter accessible to a larger, english speaking audience, and which is still widely cited, fails to give a satisfactory translation of the German “Idee”, and other related terms. Instead of translating the German “Idee” as business idea, Opie uses “the wish to do something new” (1934, p. 86); instead of “open eyes to see new ideas” , and “ strength and vitality that is not already consumed by the daily struggle” he uses “mental freedom” and “surplus force”. Opie’s translation is succinct, but it is not and never can be a substitute for Schumpeter’s original text. “The Theory of Economic Development”, translated by Opie, is an interpretation of the “Theorie der wirtschaftlichen Entwicklung”, and several important concepts, like business ideas, get lost in translation.

Only if we study both texts as a whole, and factor in Opie’s freedom of interpretation and choice of words, we see that the translation has the same message as Schumpeter’s original. The determinants of business ideas and entrepreneurship are: (1) the willingness to invest effort, referred to as “effort of will” (1934, p. 86) or “Kraft zur Tat” (1912, p. 163); and (2) the strength and vitality to be open to new ideas, referred to as “surplus force” (1934, p. 86) or “genügend Frische” (1912, p. 163). The complete paragraph in “The Theory of Economic Development” reads:

A new and another kind of effort of will is therefore necessary in order to wrest, amidst the work and care of the daily round, scope and time for conceiving and working out the new combination and to bring oneself to look upon it as a real possibility and not merely as a day-dream. This mental freedom presupposes a great surplus force over the everyday demand and is something peculiar and by nature rare. (1934, p.86)

Existenz bezahlen” (Schumpeter 1912, p. 163).

Knight Builds on Schumpeter. Indeed, Schumpeter is not the only giant in entrepreneurship research who emphasizes the importance of context effects, and limits the role of individual-level differences to explain self-employment entry. Chicago economist Frank H. Knight (1921) argues that the anticipated profit from self-employment determines the transition decision of all paid employees. The anticipated profit, in turn, is a function of “the capacity for planning”, and “the judgement or foresight of one’s capacity” of producing the anticipated profit. Both elements are “inseparably connected, and business capacity is again compounded of judgment (of factors external to the person judging)” (1921, p. 281).¹⁴

The “factors external to the person judging” are of great importance for Knight (1921). They are also key for my second paper, discussing how business ideas affect self-employment entry. This focus on context effects also shows the large gap between the current discussion on occupational choice, where individual-level differences are used to explain entry (Alvarez and Barney 2010, Shane 2003), and the origin of the discussion in economics (Knight 1921, Schumpeter 1912).

In his seminal contribution “Risk, Uncertainty and Profit”, Knight (1921) frequently cites Schumpeter, and supports his thought that business ideas are necessary, but not sufficient. Knight also maintains that business ideas can be communicated, and that communication is costly. He writes: “Ideas are not, however, free from these costs as sometimes assumed” (1921, p. 161). This argument supports our model setup, in Step 3, where we assume that business ideas can be communicated between employees, but that communication is subject to frictions. Knight even mocks his contemporary, the American economist, Alvin Saunders Johnson for his assumption that ideas are costless and multiply without bounds. Knight writes: “It would simplify the problem of education if it were so!” (1921, p. 161).

For Knight business ideas are necessary, but not sufficient for self-employment entry. Ideas are productive; but for generating the anticipated excess, it’s more important that the employee is willing to invest effort, and pays the cost of pursuing the business idea. It’s obvious, at this point, that Knight (1921) builds his argument on Schumpeter (1912) to explain how business ideas shape self-employment entry.

¹⁴Knight (1921) frequently uses the term “capacity” to describe different elements in the production process, like executive capacity, managerial capacity, and capacity for change. Capacity, here, refers to the capacity for planning that is discussed earlier on page 243.

Knight develops Schumpeter's concept of business ideas further, by making the connection to decision theory. Both authors explain why self-employment entry is rare, based on a combination of two inseparable factors (Schumpeter's "openness" and "strength", and Knight's "capacity" and "judgement"). They refrain from using the simple explanation that "exceptional achievements are done exclusively by ex ante exceptional individuals", and support the key message that "all employees can pursue a business idea, enter self-employment, and increase economic welfare, at least in theory" (Knight 1921, Schumpeter 1912).

We have seen, now, that the importance of business ideas goes back to the very beginning of entrepreneurship research. The Schumpeterian concept of business ideas and the Knightian focus on the person, are at the center of the domain of entrepreneurship research. My choice to emphasize business ideas for self-employment entry is a revision rather than an innovation. In the following section, I will detail the added value of business ideas for the discussion on self-employment entry.

Business Ideas and Self-Employment Entry

A significant body of research has examined the determinants of occupational choice. Much of this research is rooted in different disciplines (i.e., economics, management, psychology and sociology) and uses very different definitions of self-employment entry (see Parker 2009a, chapter 1.3 for a review on the measurement issue). Taken together, the studies suggest that demographics, human capital, and previous employment history are relevant determinants of entry. But there is a caveat: the unobserved heterogeneity due to different outcome definitions limits the confidence in the results.

Empirical Results. In a seminal study, Blanchflower (2000) finds that citizens of OECD countries, who enter into self-employment between 1966 and 1996, are likely to be male, relatively old, and possess a substantial amount of private capital. He also identifies a bimodal distribution of education on entry: the least educated and the most educated have relatively high probabilities of entering into self-employment. Boden (1996) finds that employees working in smaller firms are more likely to enter, compared to those working in larger firms. The results are confirmed using more recent data (Åstebro and Thompson 2011, Elfenbein et al. 2010, Poschke 2013), and

different data sources from Germany (Wagner 2003), Norway (Berglann et al. 2011), and Sweden (Joonas and Wadensjö 2013).

And although important research has examined several individual-level inputs (Katz 1990, Douglas and Shepherd 2002, Sørensen and Sharkey Forthcoming), there is little emphasis on the employee’s business idea or occupation as important determinant of self-employment entry. This is surprising, because a substantial body of economic theory suggests that business ideas and the occupations may predict job changes and entry into self-employment.

Business Ideas and Occupations Matter. It is again Frank H. Knight (1921), who develops the concept of wage-induced transition decisions to explain the dynamic labor market process by which employees decide whether or not to enter into self-employment. He writes: “The laborer asks what he thinks the entrepreneur will be able to pay, and in any case will not accept less than he can get from some other entrepreneur, or by turning entrepreneur himself” (1921, p.273). Indeed, Knight emphasizes that this calculation includes “past and even present conditions”, such as the employee’s occupation, and the “anticipated excess” from the business idea. Knight concludes: “Whether any particular individual becomes an entrepreneur or not depends on his believing (strongly enough to act upon the conviction) that he can make productive services yield more than the price fixed upon them” (1921, p.280). This thought is closely related to Schumpeter’s line of reasoning: “The action of the entrepreneur is, ex hypothesi, something new—the characteristic example of this is the creation of a new venture” (1912, p. 427).¹⁵

Based on Knight (1921) and Schumpeter (1912), it’s reasonable to assume that business ideas and occupations are relevant determinants of self-employment entry. At this point, we have enough insight into the Schumpeterian concept of business ideas, and we can discuss how it helps us to study self-employment entry.

Developing the Research Question. When writing the dissertation, I have often mulled over a question that Scott Shane posed during his Intensive Seminar in Entrepreneurship: “Why did *this* person start *this* business *this* at *this* time?” The

¹⁵“Was der Unternehmer tat, ist ex hypothesi etwas Neues—das typische Beispiel ist die Gründung einer neuen Unternehmung” (1912, p. 427).

question is an excellent starting point, since many entrepreneurship scholars are eager to explain self-employment entry as an individual-level phenomenon.

It's an integral part of good entrepreneurship research to ask not only, "How many people do enter, and do their firms grow?", but also, "Why did they enter, and what can we do to foster more productive entries?". This kind of thinking structures our research into the causes, mechanisms, and policy implications of self-employment entry. Labor economists, for example, are almost exclusively concerned with the varying rate of self-employment entry, and its effect on the labor market in general. Entrepreneurship researchers, on the other hand, look for demographic, human capital, and employment history reasons to explain why some people choose self-employment and others do not. The underlying aim of such work is the same. We want to explain Shane's question, "Why did *this* person start *this* business this at *this* time?"

The question has shaped my thinking, and in combination with Baumol's premise that the total supply of entrepreneurs is fixed, it allows me to challenge some of the basic assumptions of traditional occupational choice models. For example, once we tentatively accept the Schumpeterian concept of business ideas instead of opportunities, we can start to implement it into the discussion of self-employment entry. The focus on business ideas changes Shane's question, and we are now asking: "Why do some employees pursue a business idea and enter into self-employment, and others do not?" If we compare the new question to Shane's original, we see that some elements are missing ("this person", "this time"), and some were replaced ("this business").

The reasoning behind this alteration is as follows. The starting point of the dissertation is that there are no individual-level differences between employees. This means that we can replace "people" by "employees", since all people under consideration are working in paid employment, and we can delete "this person", since all employees share the same characteristics. The next step is to delete "this time", not because of our assumption of missing individual-level differences, but because of convenience. I want to discuss the issue at the simplest level possible, and I will introduce the notion of time-dependence in Chapter 3, where I develop our simple model into a life-course model of self-employment entry.

The most important difference between Shane's question and ours, is the change

from “this business” to “pursue a business idea”. In his “General Theory”, Shane strongly relies on opportunity realism (Ramoglou 2013, Shane 2003), a position that is criticized by Alvarez and Barney (2013) (For a more general critique of scientific realism, see Koertge et al. (1998), and Van Fraassen (1980, 2002)). Without rehashing the debate between the two camps (Alvarez and Barney 2013, Eckhardt and Shane 2013, Shane 2012), I see a strong dependence between Shane’s interpretation of scientific realism, as his stance in the philosophy of science, and his use of the term “this business” in formulating the question.

Empirical Stance. In my dissertation, I take a slightly different empirical stance, and consider myself as an instrumentalist in a liberal sense of the word (Feyerabend 1964, Van Fraassen 1980, 2002). That is, I accept the realist position that only realism can make the distinction between correct and merely useful theories (Smart 1968), but I also hold that we can identify the relative importance of theories by their use. Both positions, the realist and the liberal instrumentalist, are common among economists and management scholars, and allow us to meet on equal terms (Mäki 2002).

Shane uses the term “this business”, because it’s an *ex post* concept that can be observed and is, in that sense, representing the truth. In contrast, I am using “pursue a business idea”, because my sole requirement is empirical adequacy, and not the truth. In layman’s terms: if we can measure it, it’s good enough for me. The difficulty for me, as instrumentalist, is to decide what methods and measurements are appropriate for testing our model (see paragraph “Four Methods, Four Papers”).

Using an instrumentalist stance, we arrive at the research question, “Why do some employees pursue a business idea and enter into self-employment, and others do not?”, which represents an important variation on Scott Shane’s original question. For the sake of simplicity, I condense the research question, and replace “pursue a business idea and enter into self-employment” by “leap into self-employment”. The “leap” from paid employment to self-employment implies that employees willingly exchange a stable income flow for an irregular income flow from one period to the next. I exclude all employees who are not working full-time (in year t), and are not reporting self-employment as their primary income (in year $t+1$). This includes

hybrid entrepreneurs (Folta et al. 2010, Raffiee and Feng Forthcoming), students (Daghbashyan and Hårsman Forthcoming), and unemployed workers (Pfeiffer and Reize 2000). The final research question, as stated in the title and abstract is: “Why do some employees leap into self-employment, and others do not?”

The Special Treatment of Individual-level Differences. While Shane (2003) and Alvarez and Barney (2007) present theories that rest on internally consistent assumptions, both camps answer our research question with the following logic: “Some employees are taking the leap to self-employment, because they are different in the first place.” But this explanation is unsatisfactory.

The answer of both camps is based on the assumption of individual-level effects. Nexus theory needs “important ex ante differences termed ‘alertness’ that enable entrepreneurs to be aware of objective opportunities”, and creation theory needs differences as the result of “enacting an opportunity” (Alvarez and Barney 2010, , Table 1). Stated differently, opportunity discovery maintains that those who are closer to the opportunity (that exists out there in the world) are more likely to enter, whereas opportunity creation holds that those who possess more relevant ability to create the opportunity (in an endogenous process) are more likely to enter. Neither nexus theory, nor creation theory, can explain the existing heterogeneity of self-employment entry without the special treatment of individual-level differences.

The introduction of the homogenous decision maker as the reference point in the self-employment entry debate is another important contribution of this dissertation to the ongoing discussion.

A legitimate question, at this point, is the following: “To what extend is the concept of business ideas different from the concept of opportunities, and what do we gain from using it?”

Why Business Ideas Are Different and Useful

Both Schumpeter and Knight distinguish between opportunities and business ideas (Schumpeter 1912, Knight 1921). Opportunities are ephemeral and last only for a short time (until they are exploited or replaced), but business ideas are embedded in the employee and last as long he or she pursues it.

Now, I provide additional arguments why business ideas are different, and why business ideas are central to entrepreneurship research.

Why Business Ideas Are Different. When I tried to explain the unique perspective of entrepreneurship to my grandparents, I used the following words:

When researchers see an employee leaping to self-employment, economists think “incentives are responsible”, psychologists think “personality is responsible”, and sociologists think “social structure is responsible”. But entrepreneurship scholars are different, they think “business ideas are responsible”, and argue that business ideas shape subsequent choice behavior, such as the employee’s decision to leap into self-employment.

Using layman’s terms, we see that entrepreneurship researchers can use the knowledge of the four bordering disciplines to inform their own research, and build a distinctive domain based on business ideas.

Economists contribute utility maximization, and the fundamental insight that people enter into self-employment to generate profit; management scholars add the implementation of the business idea, including the growth of the business; psychologists help us to understand to what extent business ideas are random, and whether the attachment to a particular business idea affects subsequent choice behavior; lastly, sociologists inform us how the socioeconomic structure impacts the business idea, the choice behavior, and the implementation of the business.

The introduction of Schumpeterian business ideas does not affect the position of entrepreneurship relative to its neighboring disciplines. It leaves entrepreneurship research firmly at the intersection of economics, management, psychology and sociology, since the evaluation, development and effect of business ideas cannot be understood without using the theories and methods provided by the neighboring disciplines.

All of this is good news to entrepreneurship researchers. We do not need to start from scratch with our theory building, and can introduce, test, and reevaluate theories from the bordering disciplines. To do so, we need to refocus our attention from the special treatment of individual-level differences, including opportunity recognition, entrepreneurship-specific human capital, and personal traits, to a general theory of entrepreneurship that is based on business ideas.

The laboratory experiment (Appendix A) shows the treatment effect of business ideas on subsequent compensation decisions. The results are explained by the existence of cognitive dissonance, but there is another way of looking at the experimental results. The fact that business ideas have a treatment effect can be interpreted as a broader “idea bias”, where people systematically deviate from the norm of standard utility-maximizing behavior after creating their own idea. If this holds true outside of the laboratory, than Shane and Venkataraman’s discussion about “The Distinctive Domain of Entrepreneurship Research” (2003, 2000, 1997) takes an unforeseen turn.

Empirical evidence that a person chooses and acts differently after coming up with an idea, and that this idea can be a moneymaking business idea, puts entrepreneurship researchers on solid ground where they can argue for a distinctive domain. The bordering disciplines—economics, management, psychology, and sociology—are, indeed, useful to study the self-employment entry. But only entrepreneurship research can explain the determinants, processes and outcomes of business ideas, and their effect on the creation and growth of new firms. We, as entrepreneurship researchers, bring novel and useful insights to the table of the social sciences.

The new domain of entrepreneurship revolves around the person who pursues the business idea to create a new firm. The change in focus—from ephemeral opportunities to the person and the business ideas—does not contradict opportunity discovery or opportunity creation. Nexus theory and creation theory both assume that “evaluation involves a comparison between the discovered opportunity and other alternatives to entrepreneurship that the entrepreneur faces” (Shane 2000, p. 467), and that the evaluation is an “individual-level process” (Alvarez and Barney 2010, p. 575). Yet, the two opposing theories alone are not able to refocus their attention on the evaluation, development and effect of business ideas. Both theories are too firmly focussed on the source of opportunities, and do not capture the effect of business ideas on the entrepreneurship process.

There is another reason why the concept of business ideas is different from the concept of opportunities. For Schumpeter, what is rare is not the occurrence of the opportunity (as suggested by Shane (2003, p. 21)), or the ability to create the opportunity in an endogenous process (as suggested by Alvarez and Barney (2010, p. 557)), but the co-occurrence of “open eyes to see new ideas”, and “ strength and vitality

that is not already consumed by the daily struggle". The infrequent occurrence of this combination of "open eyes" and "strength" is Schumpeter's explanation for why self-employment entry is rare. Each element by itself is not necessarily rare or exceptional, since employees "generate a lot of ideas almost automatically", and "many [employees] among them keep the daily struggle from consuming their strength and vitality" (1912, p. 163). What is rare is the co-occurrence of the two elements, and it allows the entrepreneur to see and pursue new combinations.

Why Business Ideas are Useful. Placing business ideas as the center of the domain of entrepreneurship research, we can explain the heterogeneity of self-employment entry without resorting to individual-level differences. The reference point (homogenous decision makers), can be used in the discussion to resolve differences, and allows the opponents to go back to square one, and see at what point of the model complexity their views start to diverge. The assumption of homogenous decision makers in entrepreneurship, is akin to the assumption of utility maximization in economics, while it's easy to see that real life behavior diverts from the assumption (e.g., Veblen goods), we are still able to derive important predictions, and explain economic behavior in a non-trivial fashion, including self-employment entry.

In fact, that is another contribution of the dissertation: the integration of homogenous decision makers as the starting point for self-employment entry models, by introducing the concept of business ideas. The ongoing conversation about self-employment entry, or occupational choice, now can build upon a reference point that the previous opportunity discussion never provided. If they meet anomalies, defined as an empirical phenomenon that contradicts the anticipated result, they can increase the model complexity by adding additional assumptions, and test preliminary hypotheses to explain the observed anomaly (Popper 1962).

In comparison, the discussion today shows the growing consensus that entrepreneurship is defined by "the pursuit of opportunity" (Stevenson and Jarillo 1990, Venkataraman 1997). Scott Shane, for example, argues that "the pursuit of opportunity, itself, determines whether demand exists" (2003, p. 7). The exclusive focus on the "pursuit of opportunity" goes against Schumpeter (1912), as well as Knight

(1921), who consider business ideas to be at the center of the entrepreneurship process. Instead of putting the situation or the process at center stage, the person and the business idea are at the center of the new, and truly distinctive, domain of entrepreneurship. But this does not exclude the discussion about utility maximization, venture growth, psychological determinants, or the embeddedness of entrepreneurs. Economics, management, psychology and sociology remain valuable resources for the theory development and model testing in entrepreneurship research.

Previously, I introduced two terms: “capitalistic genius”, and “employee without qualities”. The capitalistic genius implies an exceptional quality, the genius, that enables the person to extract a profit; whereas the employee without qualities, by design, has the same cognitive processes, human capital, and endowments like everyone else. The juxtaposition of these two images allows me to highlight a fundamental misunderstanding that I see in the recent literature. Reading Schumpeter (1912) and Knight (1921), the key message of entrepreneurship is that “all employees can pursue a business idea, enter into self-employment, and increase economic welfare, at least theoretically”; not that “ex ante exceptional individuals perform exceptional achievements.” The entrepreneurship researcher, who follows the shining example of Casson (1982) and Baumol (1990), should be a friend of the Average Joe, not just of the elite. Entrepreneurship researchers should investigate—not take for granted (!)—why and how self-employees are different from those who stay in paid employment.

Research on individual-level differences is only useful, when it studies the potential influence of knowledge (Cassar 2010), preferences (Wellington 2006), genes (Nicolaou et al. 2008), personality traits (Brandstätter 1997), risk attitude (Stewart and Roth 2001), motivation (Johnson and Delmar 2010), and ability (Jovanovic 1994) on self-employment entry. The research is not useful when we look for confirmatory evidence of the preconceived notion that employees who enter into self-employment have to be different from those who stay in paid employment, because otherwise the distinctive domain of entrepreneurship research is under attack.

The domain of entrepreneurship research has to be redefined to align our thinking with the assumption of homogenous decision makers, and abolish the constant threat that the distinctiveness of our domain depends on individual-level differences between employees and self-employees. This change is necessary to build a foundation based

on which we can defend our eclectic field (Zahra and Dess 2001), and develop an improved understanding that is unique to entrepreneurship research (Venkataraman 1997). Using the concept of business ideas, entrepreneurship researchers can consolidate their domain at the intersection between the four bordering disciplines, and explain why some employees are so much more likely to enter into self-employment than others, without resorting to individual-level differences.

In other words, using business ideas as overarching concept (that incorporates both opportunity discovery and opportunity creation), we, finally, allow researchers to concentrate on the evaluation of business ideas, the area where both nexus theory and creation theory have their shortcomings McMullen and Shepherd (2006). This argument not only explains how the Schumpeterian concept of business ideas is different from previous research, but also shows what researchers gain by following in Schumpeter's footsteps to develop his concept further.

Four Methods, Four Papers

In the final section of the Introduction, I present a concise review of the four papers, and illustrate their differences in terms of theory, methods, and findings. Table 1.2 summarizes the contribution of each paper according to the specifications proposed by Low and MacMillan (1988). For a more detailed discussion of the findings, please refer to Chapter 4.

Secondary Data. The instrumentalist stance in the philosophy of science allows us to ask, “Why do some employees leap into self-employment, and others do not?” The difficulty, now, is to use this research question and find a way to test it. That is, we need to decide what methods and measurements are appropriate for model building, model testing, and model prediction.

Freedman (2009, 2010) and Hastie et al. (2005) have shown that model testing and model prediction are distinct in terms of how the researcher should approach the data. As a result, the methods used to make sense of the 7 years of employer–employee matched panel data, are different between Paper 2 “How Occupations Shape Self-Employment Entry” and Paper 3 “Big Data and Self-employment Entry”. Both papers use the same data set, and the same outcome variable (the direct transition

	Paper 1	Paper 2	Paper 3	Paper 4
Topic:	Business ideas	Occupation	Research policy	Public policy
Level:	Individual	Two levels: –Individual –Occupation	Individual	Nation
Data:	Primary (Lab)	Secondary (SCB)	Secondary (SCB)	N/A
Panel:	3 periods	2002–2008	2002–2008	N/A
Method:	Economic experiment	Multilevel survival model	Statistical learning tools	Theoretical model
DV:	Business idea: –Treatment –Control	Two entry types: –Incorporated –Unincorporated	Two entry types: –Incorporated –Unincorporated	Efficient latecomers
Finding:	Treatment effect; ideas increase WTA.	Entry dependent on occupation.	Data mining should precede model prediction.	Temporary subsidies are a mixed blessing.
Labor:	940 hours	1080 hours	190 hours	110 hours
Author:	Witte	Witte, Delmar, and Barbosa	Witte	Witte

Table 1.2: Contribution and Design Specification of the Four Papers.

Note: WTA denotes willingness to accept variable payoffs (measuring the preference for skew). DV denotes dependent variable. SCB denotes Statistics Sweden’s longitudinal database for health insurance and labor market statistics. In all papers, the target event is the direct transition from paid employment to self-employment, measured by the primary source of income.

from paid employment to self-employment, measured by the primary source of income), but the papers have different objectives. Paper 2 uses model testing to show that occupations affect entry, and Paper 3 uses model prediction to show that data mining is a necessary step in making statistically valid predictions of self-employment entry.

Techniques for model testing are well established in entrepreneurship research, and are consequently not discussed here; data mining and model prediction, on the other hand, need a short motivation. The process view of self-employment entry demands from empirical studies to make several assumptions about the data structure, the models, and the methods to study entry. Most of these assumptions are theory-based and tend not to be discussed in published research. For example, when using probit

and logit models for self-employment entry, scholars typically do not provide evidence (e.g., residual plots) that the underlying assumption of linearity holds (Freedman 2009, 2010). Also, missing data and item non-response are rarely discussed. To account for these problems, I use data mining prior to model prediction.

Primary Data. The large data set from Sweden has many advantages, but unfortunately there are no variables that would allow me to test the effect of business ideas on the likelihood of self-employment entry. Since the influence of business ideas is essential for the simple model, we need to choose a different method that allows us to test whether business ideas affect the likelihood of entry. In other words, our assumption about the existence of a meta rule (“add a premium to own ideas”), requires at least some form of empirical support.

To test whether business ideas affect the transition from paid employment to self-employment, I had to make several difficult choices among the available methods. First, I chose a randomized laboratory experiment, and followed the guidelines of experimental economics (Shadish et al. 2002). The reason for choosing an experiment is straightforward. Only randomized experiments, allow researchers to test their hypothesis in a controlled setting, and use a method that is equivalent to the theoretical *ceteris paribus* assumption (Winer et al. 1990). While it’s true that the introduction of experiments as appropriate research method is fairly recent in entrepreneurship research (Acs et al. 2010), they are by no means new to experimental economics and social psychology.

After deciding which method to use, I faced the difficulty of designing the experiment, and finding an adequate proxy for business ideas and self-employment entry. I randomly assigned participants in two groups (control and treatment), and developed an idea creation and effort investment task (similar tasks are frequently used in experimental social psychology and experimental economics). The outcome variable in the experiment was the participant’s choice of the reward distribution, and can be linked to the outcome used in Paper 2 and 3, since all papers measure self-employment entry by the primary source of income. In the experiment, the decisions were incentivized, and all participants were paid according to the choices they made (Read 2005, Smith and Walker 1993). The payoff represents their primary income from the experiment.

Using the experimental design, this experiment is the first to show that the mere fact of pursuing their own business idea systematically affects the participant's preference for skew (accepting a reward scheme that has a larger variance), and their compensation decision (see Appendix A).

Policy Model. After model testing and model prediction in Paper 1–3, I decided to complement this research with a concise policy paper (Paper 4). It starts from the following observation.

The outcome of the mobility process in the labor market, as described by Knight (1921) and Schumpeter (1912), is the eventual transition into self-employment by experienced employees who wish to pursue their own business idea. Those who do have business ideas and want to pursue them, however, face several challenges (Schumpeter 1912, p. 163), one of them is the investment cost of starting a business. Temporary subsidies, at least in theory, can help employees to overcome some of the financial barriers, and allow them to enter into self-employment.

The policy paper sheds new light on the established question whether temporary subsidies actually increase the occurrence and quality of self-employment over time.

In summary, I model and test the dynamic process of self-employment entry using four different research methods—laboratory experiments, multilevel analysis, data mining, and model building. My aim is to improve our understanding of the emergence of self-employment from paid employment, by providing three empirical papers and one policy paper.

To problematize the intertextual field, I review the literature, identify the ongoing conversation, and describe how it needs to move forward (Locke and Golden-Biddle 1997). Chapter 4 summarizes the four papers, and the final chapter concludes.