Chapter 1. Spin-off founding processes

1.1 Introduction

“Fitter, happier, more productive”. This is the first line of a Radiohead song which describes the perfect, modern person. The song continues: ”Comfortable, not drinking too much, regular exercise at the gym”. And, after a list of commendable characteristics, “now self-employed” is added to the list. Apparently, Radiohead regard being self-employed as a typical characteristic of the perfect person. Although the song eventually reveals a critical downside to being a perfect person¹, the positive connotation attached to self-employment is widely accepted. The philosopher Alain Ehrenberg even describes entrepreneurs as modern heroes. Entrepreneurs have no roots or past, they are not led by anyone and only answer to themselves (Ehrenberg, 1991)². Clearly, it is hard to substantiate these claims, but they seem to coincide with common views of entrepreneurship. Besides, studies do show that gaining independence is one of the main reasons for choosing self-employment (see for example Bruins, 2002). Entrepreneurship inevitably involves a certain degree of economic pioneering (see also Schumpeter, 1912). However, it is too simplistic to think of entrepreneurs as lone wolves who act more or less in isolation of other actors in the founding process of their new firms. In fact, foundings are often the result of cooperation between several actors. Group foundings are of course a prime

¹ The perfect person ends up as “a pig, in a cage, on antibiotics”
² Adapted from Braaksma (2006, p.9)
example: entrepreneurs team up and start a new firm together. Other forms of cooperation also exist. Sometimes new firms are the result of cooperation between existing firms and entrepreneurs. These new firms are generally referred to as spin-off firms. Spin-off firms defy the idea of entrepreneurs as solitary actors who challenge the existing status quo. Rather, spin-off entrepreneurs build their firms on existing structures and knowledge. Previous research has shown that this specific route to founding a firm can be very successful (Garvin, 1983; Klepper, 2001b; Tübke, 2004): previous experiences and relations provide a head-start for the spin-off entrepreneur.

The above-average performance of spin-off firms has sparked a line of research that focuses on spin-off founding processes. Although much progress has been made, spin-off research is by no means complete. In particular, the role of parent companies in spin-off founding processes remains largely ignored. This study tries to contribute to the field of spin-off research by explicitly addressing the nature of the relationship between a parent company and the founding of a spin-off company. Taking this relationship as the starting point, spin-off founding processes are described. Further, the effects of the inherent relationship between parent firm and spin-off on performance are assessed.

1.2 Why spin-off research?

There are several reasons for studying spin-off processes. First, there is a nagging theoretical problem in the field of entrepreneurship which seeks a better understanding of spin-off founding processes. The theoretical framework underpinning entrepreneurship studies has developed along two quite distinct lines of thought, the first focussing on the individuals involved in founding processes, and the second taking an organizational perspective. Spin-off firms, by definition, combine organizational and individual elements and, therefore, spin-off research is located on the edges of both theoretical views. Spin-offs are interesting test cases with which to asses the relation between theoretical ideas based on the individual and ideas about the actions of organizations. The next section introduces methodological problems that arise from the sharp divide between the two schools of thought. Apart from this theoretical issue, spin-offs have several important functions in the economy that make them worth investigating. First, spin-offs play a role in the creation of industrial clusters and the spatial distribution of knowledge (Klepper, 2001b; Malmberg and Maskell, 2002). Second, previous research has shown that spin-off firms are generally more successful than other forms of entrepreneurship (Bernardt et al., 2002).
The forthcoming sections address the motives for studying spin-off founding processes in more detail.

1.2.1 Theoretical issue: founding rates

Although the field of entrepreneurship has developed rapidly over recent decades, important issues remain unresolved. For example, a solid and agreed on theoretical framework for entrepreneurship is yet to be established (Shane and Venkataraman, 2000). Another lingering issue is the unit of analysis. There are two distinct currents in entrepreneurship research with different units of analysis: a large stream of research takes the individual as the starting point, while another stream focuses on organizational units. There is a rather clean divide between the two currents. Both views aim to understand the foundation of new firms, but adopt different ideas and methods. Even the concepts and words differ, sometimes leading to Babylonian misunderstandings. Note for example how, in the previous lines the words ‘new firm formation’ (a term mostly used in the realms of research based on the organizational view), ‘entrepreneurship’, and ‘self-employment’ (words commonly seen in the individual approach) were used to denote the foundation of new firms by entrepreneurs. This sharp divide leads to empirical difficulties, particularly in the calculation of founding rates.

Founding rates lie at the heart of research on regional differences in new firm formation and entrepreneurship. The founding rate is an important measure to see where, and in which sectors, new firms are generated. Founding rates can be compared to birth rates, as used in human demography. In demography, rates describe the number of occurrences of a certain event in relation to the number of units exposed to undergoing the event. In the case of birth rates, the number of new born babies is related to the number of people who are at risk of having a baby, that is the group of fertile women. For the foundation of firms, a so-called exposure population is not so easily established. Which actors start new firms? There is an organizational answer and an individual answer to this question. The ‘organizational’ or ‘ecological’ approach (Audretsch and Fritsch, 1994) considers the existing pool of organizations to be at risk of establishing new firms. Ecological founding rates are calculated by dividing the number of new firms by the stock of existing firms. In doing so, it is implicitly assumed that all foundings are the result of actions by existing firms. Indeed, existing firms do start new firms. Sometimes firms have compelling incentives to establish new firms: entry to new markets, employment schemes, rejection of non-profitable
divisions, or rejection of divisions as part of a back-to-core business decision (Rosa and Scott, 1999). However, not all new firms are the result of such strategic considerations at the firm level. Individual actions are also important. The 'individual' or 'labour-market' approach emphasizes individual initiatives. The exposure population then consists of the total labour supply. Founding rates are calculated by dividing the number of new firms by the total labour supply. In the labour market approach, all firms are assumed to be the result of individual actions. The influence of existing firms is ignored.

Researchers usually choose one of the two approaches as a framework for their studies. Audretsch and Fritsch (1994) showed that this choice can influence the results. They correlated unemployment figures and founding rates using both the ecological and the labour market approaches. Unemployment figures correlated negatively with labour-market-based founding rates, whereas unemployment had a positive relationship with ecological founding rates. The only difference between the calculations is the denominator used. The distinct outcomes must therefore be explained by the relationship between the stock of firms and the people in the labour market. Regional differences in the relationship between the alternative denominators lead to distinct regional patterns in the founding rates. Figure 1.1 illustrates this point for the Netherlands. The map shows marked regional differences in the number of inhabitants per firm. Regions in the north of the Netherlands have many inhabitants per firm. As a result, the ecological approach renders relatively high founding rates in this area. Publicists interested in portraying the north as a dynamic and vibrant region should use ecological founding rates. The area surrounding Amsterdam will appear to have relatively high founding rates if the labour market approach is used.

These examples show the problems related to the use of founding rates in modelling regional differences in new firm formation. Theoretically, the solution to the problem is straightforward. In order to construct sound founding rates, the events and the exposure population somehow need to be matched more precisely. In other words, foundings based on organizational initiatives should be related to the pool of existing firms, because they are behind the new firms. Foundings resulting from individual efforts should have the labour market population as their exposure population. The problem then is to determine which firms are the result of individual efforts, and which of organizational actions. This calls for research in which the impacts of both personal inputs and organizational inputs are assessed. Spin-offs, being based on both individual and
organizational elements, form a logical starting point. Spin-off research should help reveal the relationships between individual efforts and the efforts of existing firms. By determining this relationship, the theoretical gap between entrepreneurship studies and organizational studies can be narrowed.

1.2.2 Knowledge spillovers and clusters

The question why certain regions are economically more successful than others is at the core of research in economic geography. Although many answers have been formulated, one important element emerges in practically all of them: the spatial concentration of activities. Economic activities tend to cluster together (see, for example, Christaller, 1933). Apparently, a concentration of activities is beneficial. The concentration of economic activities has two important benefits for the actors. The first benefit is based on agglomeration or urbanisation economies (Malmberg and Maskell, 2002); the overhead costs of production, such as infrastructure, transport, and the availability of service industries, are spread over many actors, making the average costs lower. Apart from these general benefits, there are also concentration benefits at the industry level,
caused by so-called localisation economies (Malmberg and Maskell, 2002). Localisation economies are industry specific, and they involve the availability of skilled labour and regionalised knowledge about production processes. As a result, certain regions are more attractive to firms in specific industries. Prime examples of industrial clusters are those found in Silicon Valley for ICT firms (see, for example, Saxenian, 1994) and in Detroit for the automobile industry (Klepper, 2001b). The notion of regionalised knowledge has sparked a very popular research line (see, for example, Saxenian, 1994; Porter, 1990; Scott, 1988). In the theoretical framework of this line of thinking, clustered firms experience knowledge spillover: part of the firms’ knowledge is shared with the environment, and can be used to the benefit of other firms present. In its most extreme case, the knowledge is available for the taking: it is in the air. Knowledge spillovers lead to a favourable regional milieu for firms that can benefit from the available knowledge, notably firms in the same industry. Although thinking on knowledge spillovers has evolved into a very productive and popular line of research, it is also criticised. First, it remains unclear which mechanisms foster the transfer of knowledge (Acs and Armington, 2004). Clearly, knowledge is not really in the air, waiting to be used. There has to be transfer mechanisms that allow the knowledge to flow from one firm to another. Porter (1990) assumes informal networks to be the transmitters of knowledge, whereas Forni and Paba (2002) stress the importance of input-output relations. Similarly, the mobility of employees is also seen as a spreading mechanism. Employees can take their knowledge to other firms (Appold, 2001), or start their own business based on experience and specific knowledge gained (Appold, 2001; Acs and Armington, 2003; Franco and Filson, 2002). Although some ideas about knowledge transfer have been developed, the current state of affairs is far from a comprehensive description of the transfer mechanisms. The second point of criticism involves the reasons for firms allowing their knowledge to freely spill into the surrounding environment. Firm-specific knowledge creates a competitive advantage over other firms. In order to retain a competitive advantage, firms will protect their knowledge rather than share it with the environment (Gordon and McCann, 2003). Thirdly, the concept of knowledge spillover has no bearing on the evolution of clusters. It provides an argument for being part of a cluster, but it does not explain how the cluster emerged and developed.

Spin-off formation can provide an answer to all three criticisms. First of all, new firm formation through spin-off creation is a possible mode of knowledge transfer. It is a special case of job mobility which involves knowledge
transfer from firm to firm (Madsen et al., 2002). Employees leaving one firm can deploy their knowledge in another. In the case of spin-off formation, ex-employees use their knowledge and skills in the foundation of new firms. Job mobility, including spin-off creation, also explains how parent firms spill part of their knowledge into the environment despite the intention to retain their knowledge to protect their competitive advantage. Employees will inevitably change jobs or become self-employed, even against the wishes of the parent firm. Through job mobility, therefore, knowledge spreads to other firms in the region. Klepper (2001b; 2002; Klepper and Thompson, 2005) illustrated the role of spin-offs in the evolution of clusters. In spin-off processes, entrepreneurs build on the knowledge of their previous employers. The new firms will therefore be in the same industry. If a parent firm spawns new firms (spin-offs), an exponential process can commence. The spin-off firms can produce other spin-offs, which create yet new spin-offs and so on. Spin-off entrepreneurs are likely to live close to the parent company, and start their new firms in the same region. Eventually, a regional cluster of firms active in the same industry emerges.

Although spin-off creation processes principally happen at the firm level, there is an intrinsic link to the regional level. Spin-off research has a regional dimension in the sense that it ties in with discussions on knowledge spillovers and cluster formation. Describing the driving forces behind spin-off creation, and the transfer of knowledge involved, can help advance the theory of regional development.

1.2.3 Successful entrepreneurship

As noted earlier, entrepreneurship is surrounded with an aura of progress. Both researchers and politicians stress the importance of entrepreneurship for economic development. And, indeed, entrepreneurship does play an important role in the rejuvenation of economies. Jobs are created and entrepreneurship leads to enhanced levels of innovative output (Michelacci, 2003). Although entrepreneurship overall contributes to economic development, all individual cases of entrepreneurship are not necessarily success stories. Many entrepreneurial efforts survive for only a short period of time (Schutjens and Wever, 2000). On a personal level, this can involve financial loss and disappointment for the founders (Storey, 1982). In a regional context, valuable resources were used in the founding efforts that were thus unable to contribute to the wider economy. From a policy point of view, it can be very useful to
assess new firms’ survival chances right at the beginning of operation. Especially if policy is to be tailored towards improving the quality of entrepreneurship, rather than the quantity, it needs a pre-founding assessment of the success chances of entrepreneurial efforts. On the basis of this information, decisions can be made regarding the allocation of scarce resources.

Spin-offs appear to be a rather successful form of founding (Bernardt et al., 2002; Braaksma & De Jong, 2005). Spin-offs have greater survival chances and employ more people than other types of new firm (Tübke, 2004). The argument explaining the elevated levels of performance is simple: because of their links to existing firms, spin-off firms, compared to other firms, have better access to valuable production resources. The larger pool of resources gives spin-off firms a head-start over other firms. Although this mechanism appears rather straightforward, the nature of the skills provided to the spin-off firms is still largely uncertain. Empirically, there has been little attention given to the actual skills and knowledge types used by spin-off firms. This is not only a scientific gap, it also makes it difficult to develop policy aimed at influencing or stimulating those people who have good prospects of starting a successful new firm (Autio, 2005).

1.3 Research themes

Recently, spin-off formation has been increasingly acknowledged as an important type of entrepreneurship. In existing studies, spin-offs are normally conceptualised in a very practical manner. Spin-offs are, for example, defined as firms started by entrepreneurs with same-industry experience (Garvin, 1983) or split-offs of larger companies (Tübke, 2004). This practical conceptualisation of spin-offs can probably be understood as a result of a lack of data suited to study spin-off processes. Focussing on the backgrounds of the actors involved allows researchers to make use of the scarce data available. However, the role of available statistics in the conceptualisation of spin-offs has resulted in a number of distinct spin-off definitions, making comparisons between studies difficult. Further, the theoretical underpinning of the spin-off concept has remained largely undeveloped. There seems to be a consensus that spin-offs are firms based on the skills and resources of existing firms (Parhankangas and Arenius, 2003; Bernardt et al., 2002). Experienced employees, for example, carry specific knowledge and skills which are based on experiences gained in the industry. These experiences can be used in new firm formation processes. However, our knowledge does not extend far beyond this general statement. Although much is
known about the actions and performance of spin-off firms, the nature of the actual transfer of skills and resources is still unclear. Little is known about the nature of the skills transferred or the processes surrounding the transfer. This study tries to contribute to spin-off research by explicitly addressing the nature of skill transfer from parent company to spin-off. Not only are the skill types seen as important, also the mechanisms governing the transfer processes are addressed.

*Question 1a. Which types of skills and resources resulting from previous employment do entrepreneurs deploy in the founding of new firms?*

Note that the question is phrased from the viewpoint of the entrepreneur. In doing so, the answer will add to the understanding of entrepreneurial efforts. However, implicitly, it also addresses the influence of existing firms on the founding processes of new ones. By transferring resources, through the experiences of would be entrepreneurs, parent firms influence the founding of new firms. Carroll and Hannan (1999, p.48) observe in this respect that: "In general, the clarity of corporate parenthood is variable and ambiguous." In other words, it is difficult to identify the roles that existing firms play in the founding of new ones. It is even somewhat unclear why firms would even consider helping new firms to come about in the first place. If support is given, it involves the loss of valuable resources and the introduction of a new player in the market, and quite possibly a competitor. By addressing the actual transfer of skills and resources, the ways in which parent firms influence the founding of new firms can be clarified. Further, it may help explain the motives of firms in helping employees to start new firms. By addressing resource transfer, parent firms are not merely regarded as part of an entrepreneur’s background; they are the sources of valuable skills and resources. The influence of existing firms on the founding of new ones materialises in the resource transfer from existing firm to founding. Whereas Question 1a addressed the entrepreneurial view on the resource transfer process, Question 1b regards the process from the parent’s point of view. The questions are therefore complementary.

*Question 1b. To what extent and in which ways do existing firms influence the gestation processes of new firms?*
Question 1b ties in with the discussion on relating new foundings to the appropriate exposure population. Spin-off firms are, by definition, influenced by existing companies. Therefore, the founding rate of spin-offs can logically be related to the number of existing firms (i.e. the ecological approach). However, the ties between parent firm and spin-off will vary. Individual efforts will remain important in the founding of many spin-offs. In order to match foundings to the appropriate exposure population, a founding needs to be labelled as either firm-based or individual-based. To make such a decision, a threshold value for firm influence is necessary. The threshold value acts as a dividing line between the two groups of foundings. Obviously, the severity of the threshold value will determine the share of new firms that are identified as spin-offs. An aim of this study is to find a way in which spin-off formation can be placed in the overall framework of firm demography. Not only would this mitigate the theoretical problem surrounding the calculation of founding rates, it would also open the way for meaningful regional comparison of spin-off rates.

Question 2. How can spin-offs, that is new firms influenced by existing firms, be best included in the framework of firm demography, most notably in establishing founding rates?

Research questions 1 and 2 address the mechanisms behind the spin-off process. Understanding the nature of the skills transferred to foundings, and the circumstances surrounding the transfer, adds depth to the conceptual description of spin-offs firms. There is still room for such a conceptual discussion as a complete picture of what spin-off formation involves has yet to be provided. The focus on skills transfer also relates to more practical and policy-relevant elements of spin-off formation, such as performance.

Most existing spin-off research focuses on performance. Because of favourable backgrounds, spin-off firms tend to outperform other new firms. The utilisation of skills resulting from previous experience is assumed, but is not addressed explicitly. By placing skills transfer in the centre of analysis, the reasons for performance differences among new firms can be elaborated upon. The question of explaining performance differences is not new, but the direct empirical translation of the theoretical explanation is.

Question 3. How do the skills and resources resulting from previous employment influence the performance of new firms?
Understanding the mechanisms that govern performance of new firms is relevant in itself. Particularly in the light of the increasing policy attention to successful entrepreneurship, additional information about performance is called for. Further, in addressing the founding mechanisms and performance differences between firms, a substantive argument for disentangling founding rates is provided. If spin-offs (or firm-influenced foundings) differ from other foundings, the spin-off founding rate involves different information than founding rates describing individual efforts. Disentangling founding rates may therefore not just be a methodological exercise, it could also lead to a better description of the nature of regional new firm formation patterns.

1.4 Guide to the study

The research is presented in seven chapters. Chapters 2 and 3 focus on the transfer of resources from existing firms to new firms. In these chapters, Research questions 1a and 1b are addressed. In Chapter 2, the theoretical foundation of the research is described, focussing on the ways in which resources and skills can flow from parent companies to spin-offs. The theory is based on ideas taken from organizational theory, entrepreneurship research, and previous research on spin-offs. Chapter 3 provides an empirical translation of the theoretical framework introduced in Chapter 2. It discusses the types of resources that are transferred from parent company to its offspring. In addition, the mechanisms behind the transfer are examined. It describes the circumstances under which resource transfer is likely. The analysis in this chapter is based on original data gathered by means of interviews and a postal questionnaire. This was necessary because existing datasets did not cover the information needed to describe founding processes and resource transfer between firms.

Chapters 4 and 5 take the argument one step further and empirically assess the performance of spin-off firms compared to other foundings. Spin-off firms are to an extent based on the resources transferred from a parent company. As a result, they should have a head-start over other foundings. Performance is a multi facetted concept and can be operationalised in many ways, ranging from survival propensities, to employment growth, turnover development, profit, or innovative output. This study uses two distinct aspects of performance. Chapter 4 focuses on factors that influence the successful completion of the founding process, whereas Chapter 5 focuses on the innovative performance of foundings. Both chapters use quantitative methods to
assess performance differences between founding types. The analyses are based on secondary data sources which allow the identification of spin-off firms using the existence of resource transfer as the defining feature.

Chapter 6 addresses Research Question 2 concerning the relationship between the adopted approach, with a focus on the transfer of resources and skills, and the firm demographic framework. This chapter shows how different definitions of spin-offs lead to different empirical results. Further, the spatial distribution of Dutch spin-off firms and other foundings is described and explained, using a large register-based dataset of foundings. Finally, Chapter 7 summarizes the study. General conclusions are drawn from the individual analyses carried out in the earlier chapters.