Why Butterflies Don't Leave
Spatial development of new firms

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1. Introduction

New firms and entrepreneurship have been discovered as important factors in economic development (Audretsch and Thurik, 2000; Nijkamp, 2003). One particular group of firms, new firms that have rapid growth on a sustained basis, have been especially important for the creation of jobs (Birch, 1987; Kirchhoff, 1994; Storey, 1997; Schreyer, 2000) and the commercialization of new knowledge (Roberts, 1990; Roberts and Malone, 1996). There is no complete understanding of how and why firms develop (Geroski, 2001), and we know even less about the spatial development of new fast-growing firms (O'Farrell and Hitchens, 1988; Beyers, 2002). In contrast to the location of new firms in general (Cooper, 1998; Feldman 2001; Sørensen and Sorenson, 2003) and the location of multinational firms (Hagström, 1990; Dunning, 1998; Cantwell and Stangelo, 2002), we know almost nothing about the location of new fast-growing firms. In this paper we focus on this type of new firm, as these new firms are most important for regional economic development and these new firms are most dynamic in their spatial organization.

Knowledge about the nature of these firms is highly needed, because recent empirical research shows that relocation decisions of firms are mainly determined by firm internal factors (Pellenbarg et al. 2002). The influence of firm-internal factors has been neglected too much in the past: a more in depth analysis of the role of firm-internal factors is necessary. Some authors have advocated life-course oriented research on the location of firms (Stam and Schutjens, 2000; Pellenbarg et al., 2002). Such an orientation begs the question of the role of the entrepreneur in the start and location of the firm. For the analysis of these two units of analysis – the firm and the entrepreneur – we need a conceptual

foundation that includes both a proper conceptualization of the firm (Garnsey 1998) and entrepreneurship (Davidsson 2003). Next to these two relatively neglected units of analysis authors have recently advocated a theoretical orientation that rejects atomistic notions of actors, and that emphasizes their social relations as central units of analysis (Boggs and Rantisi 2003). However, this paper also addresses the danger of oversocialized conception of actors in social science disciplines like economic geography and entrepreneurship studies.

The central research problem in this paper is: how and why do new firms develop in space during their life course? The purpose of this paper is to improve our understanding of the spatial development of new firms. The development in space involves the location, relocation, opening and closure of branches of new firms. This study shows how the changing characteristics of the firm, its external relationships, the changing role of the entrepreneur and his personal relationships affect the spatial development of new firms. The spatial development of new firms is explained by the willingness and ability to change the spatial organization of the firm during its life course.

The paper is structured as follows. We will start with a conceptualisation of new firms and their spatial development. Section 3 presents the research design and methods. In section 4 and 5 we will respectively explore and explain the spatial development of new firms. In the final section we will discuss the implications of this study.

2. Conceptualising new firms and their spatial development

Until now most studies on the theory of the firm, and firm location in particular have neglected the changing nature of the new firm and the development processes underlying this changing nature. This can be traced back to three dominant theories of the firm in location studies until now, namely neo-classical theory, transaction cost theory (McCann and Sheppard, 2003), and the behavioral theory of the firm (Pen, 2002). The first two theories are essentially comparative static theories (Rathe and Witt, 2001), while the latter theory is dynamic, but only on the short term of decision-making processes (cf. Knudsen 1995). In spite of the long tradition of location studies[1], there is indeed a gap to be filled. This gap concerns a life course approach to the analysis of the spatial development of new firms. Recently, new approaches have been proposed that explain the development of new firms as an unfolding process (Garnsey 1998; 2001; Garnsey et al. 2003; Rathe and Witt 2001). In such developmental approaches firms are not given, unchanging entities: they possibly undergo structural change, like turning from a caterpillar into a butterfly (Penrose, 1995). These approaches shed new light on the theory of the (new) firm[2] and draw attention to the neglected entrepreneurial role in

[1] See for a recent overview Scott 2000; Pen 2002; McCann and Sheppard 2003; Stam 2003.

[2] These approaches are based on a Penrosian theory of the firm (see Penrose, 1995; Foss, 1997; Garnsey, 1998; Hodgson, 1999)

organizational change. Taking into account the role of the entrepreneur as a person, also necessitates the study of his personal network relations (Granovetter, 1985; 1995; Johannisson 1995; 2000). In order to analyze the way in which new firms grow by co-evolving with others, forming connections and partnerships with complementary organizations we have to analyse the inter-organizational network relations in which these firms are involved (Schutjens and Stam, 2003). Especially this latter factor has been assumed important for explaining the spatial development of firms, as the recent cluster literature states that inter-organizational relations are tying firms to their regional cluster of origin (Van den Berg et al., 2001), be it due to localised knowledge networks (Porter, 1990; Storper, 1992; Maskell et al. 1998; Rutten, 2000) or due to dependence of small firms on regional 'core' firms (Storper and Harrison, 1991; Romo and Schwartz, 1995).

2.1. Development phases in the life course of new firms

In order to analyse the influence of the firm development during the life course on the spatial development of the firm, we have deconstructed the life course of the new firms into distinct periods: *development phases*. The development phases are not phases in the sense of a predictable sequential process, but rather as a way of structuring the development of new (fast-growing) firms. This 'temporal bracketing' in the form of development phases permits "the constitution of comparative units of analysis for the exploration and replication of theoretical ideas" (Langley, 1999, p.703). These development phases constitute comparative units of analysis for the exploration of the interaction between development of new firms in time and development of new firms in space. Insight into the changing nature of new firms is a necessary condition for the general purpose of this paper: to improve our understanding of the spatial development of new firms.

The distinct development phases have been defined as phases that are dominated by specific processes. The *start-up phase* is defined as the period in which the entrepreneur recognizes a profitable market opportunity and in which he starts to mobilize the resources necessary for taking advantage of this opportunity in an output market. In this phase the new firm is often, but not necessarily, established as a legal entity[3] (Gartner 1985). The firm emerges out of the combination of the knowledge of the entrepreneur and the resources he mobilizes[4]. These resources have to be deployed in order to realise an opportunity: a productive base[5] has to be established. The *initial*

[3] In the period prior to the legal establishment of the new firm, the (would-be) founder may be called a 'nascent entrepreneur' (Van Gelderen, 2004).
[4] Resource mobilization comprises the combination of resources the entrepreneur has direct access to, acquires or creates in order to take advantage of the opportunity recognized.
[5] Here we refer to the productive base of a firm, not of an economy (cf. Dasgupta, 2001: "An economy's productive base includes not only its stocks of manufactured, human, and natural capital, but also its institutions

survival phase is the period after the start-up phase in which, first, new value is created and delivered on a product-market, and second, returns are captured as the outcome of a process of competition. In more abstract terms this means that the new firm is able to generate resources through its own productive and commercial activities. Financial resources (profits) are generated as the outcome of the process of competition, which means that the new firm is able to survive in a market economy. In order to survive in a market economy on a longer term, entrepreneurs have to solve basic problems: after resourcing the venture, the product has to be developed and produced, and connected to suppliers and customers. Competences may be created as the outcome of a learning process in solving these problems (cf. the 'Penrose-effect'). When the new firm not only survives but also grows, the *early growth phase* is entered. The early growth phase is defined as the period in which the growth of (tangible and intangible) assets of the firm exceeds a certain (measurable) threshold (cf. Garnsey et al. 2003). This growth can be caused by different processes and in different ways. Two dominant processes in this phase are the profitable exploitation of new market opportunities or delivery of products in a growing product-market (share). This growth can also be caused in by an 'artificial' process of resources acquisition, in which external investors supply financial resources expecting superior returns in the future. Two different ways of growth can be distinguished: organic and acquired growth (Davidsson and Wiklund 2000). There is not only progress in the life course of new firms: periods of reversal are common experiences for many new growing firms. Such a periods has been called a *growth syndrome phase* here. The growth syndrome phase is defined as the period in which the decrease of (tangible and intangible) assets of the firm exceeds a certain (measurable) threshold (cf. Garnsey et al. 2003). Growth syndromes can be caused by a plethora of factors related to the entrepreneur(ial team), the firm, and the external environment. Finally, there is a phase that has many similarities with the early growth phase, but differs in one important aspect. This aspect is resource accumulation, which dominates the *accumulation phase*. This resource accumulation is caused by the same dominant processes as in the early growth phase, but only with more favourable outcomes. Resource accumulation refers to the processes that have led to excess capacity (Penrose, 1995) and organizational slack (Cyert and March, 1963). These two outcomes, can respectively lead to additional deployment of (excess) resources and the reinvestment of surplus financial resources. The resource accumulation process allows firms "to reorient themselves in response to changes in opportunity structure without succumbing to resource shortages" (Garnsey, 2001, p.25). In this phase it is possible to grow not only in an organic way, but also in an external way, since firms in the accumulation phase have the financial and managerial resources to take over relatively large firms successfully. The phases and dominant processes are summarized in table 1.

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and cultural coordinates"). The productive base refers to the firm's processes (e.g. new product development, sales/marketing, logistics) and asset positions that collectively encompass its competences and capabilities (Teece et al. 1997, p.518).

Table 1 Development phases and dominant processes

Phase:	**Process:**
Start-up	opportunity recognition; resource mobilization
Initial survival	Resource generation (create and deliver value, and capture returns)
Early growth	surplus resource generation / opportunity recognition
Growth syndrome	Resource detraction
Accumulation	Resource accumulation

Although these development phases are presented in a specific sequence, they do not necessarily have to follow this sequence during the life course of new firms (see Garnsey et al., 2003). A study of these processes and phases provides essential insights into the changing nature of new firms and the sources of their diversity. This makes the analysis of the influence of firm development in general on its spatial development tractable.

2.2. Spatial development

The purpose of this paper has been stated as to improve our understanding of the spatial development of new firms. This means that we not only have to take into account a conceptualization of new firms, and the processes of development, but also a particular dimension of new firm development, namely its spatial development. Spatial development implies change in the spatial organization of firms as a consequence of processes of development and possibly as an antecedent of processes of development. This spatial organization can be defined as the spatial configuration of physical resources[6], resulting from a location decision-making process. Our definition of spatial development is based on both behavioral economics, as it can be considered as the outcome of an (investment) decision-making process (Cyert and March, 1963), and on the resource-competence based view of the firm, as it conceptualizes the firm as a collection of productive resources (Penrose, 1995).

We shall contribute to the literature on (new) firm location by means of the three potential innovations. The first innovation is the addition of 'opportunity-driven' location decision making next to the 'problem-driven' location decision making in the behavioral approach. These two types of decision-making define the willingness the change the spatial organization of the firm. We make a distinction between 'entrepreneurial' and 'managerial' opportunities, which refer to the high, respectively low level of uncertainty involved (cf. Knight, 1921; Beckert, 1999). The second innovation is the identification of the contribution of willingness and ability aspects in the location decision-making process. The ability to change the spatial organization can be explained by three

[6] This also comprises the so-called 'locational assets' of firms (Teece et al. 2000). Especially in the restaurant, retail, and hotel industries location can be a key asset, leading to competitive advantage (Aaker, 1989). A valuable location can act as an imperfectly imitable physical resource for the firm (Barney, 1991), or a tangible resource enabling a firm to exercise its capabilities, leading to a positional advantage (Day and Wensley, 1988). In this way, the spatial organization of the firm can be regarded as a portfolio of locational assets.

strands of literature: the 'neo-classical economic' literature emphasizing the comparative costs (and thus 'economic' ability) of production at a certain location[7] (cf. Hoover and Vernon, 1959); the 'resource dependence' literature emphasizing the structural dependence on transaction partners (cf. Romo and Schwartz, 1995); and the resource-competence literature that conceives the firm as a bundle of resources and competences that enable the firm to execute certain spatial strategies (cf. Kogut 2001; Luo 2000). The identification of the contribution of willingness and ability aspects makes it possible to verify whether indeed willingness rather than ability forms the bottleneck in locational change. We could for example hypothesize that new/small firms are 'locationally indecisive' as they do not consider at all to change their spatial organization, while old/large firms are 'locationally decisive', considering to change their spatial organization as a reaction to changing environments (Ellinger, 1977). However, such a hypothesis is based on a cross-sectional comparison of firms, while we are interested in a longitudinal analysis. This brings us to the third innovation, a life course perspective in which the changing conditions enabling and constraining the spatial development of the new firm can be analyzed.

This spatial development may materialize on different spatial scales. It may occur on a regional level, i.e. the level on which almost all relocations take place, but it may also be on an international level in the form of so-called 'foreign direct investments' of multinational firms (Dunning, 1998). Spatial development thus involves both relocation and the opening and closure of branches, two types of location changes that have mostly been taken separately in the literature until now. This separation is not very fruitful for analysing the development of (new) firms, as these two types of location changes can be substitutes of each other.

Analyzing a firm with a specific spatial organization at a certain moment during its life course implies that the firm has been willing and able to realize the locational change that led to this spatial organization. We define the unobserved concepts of willingness and ability such that their levels should both surpass a given threshold for a firm to change its spatial organization: ability is a necessary condition while willingness is a contingent condition (problem- or opportunity-driven), which together combine into a locational event. In other words, willingness refers to the stated preference (a so-called "locational initiative"), while ability is needed to turn this into a revealed preference.

Six models of spatial development have been found in the literature that can be related to the development phases that have been conceptualised in section 2.1. We have synthesized these models

[7] Including both location-specific production costs and transportation costs of inputs and outputs (cf. Moses, 1958), or in a more advanced version also including logistics-costs (transport costs plus all of the industrial costs associated with inventory holding) or spatial transaction costs (both transportation and information transmission costs of production and trade) (McCann and Sheppard, 2003).

of spatial development[8]. According to these models we expect that new firms in the start-up and initial survival phases do not explicitly make a location-decision, but decide to sell products on the markets that can be reached from their home location. This decision is led by their superior knowledge of the local market, and the proximity needed for close interaction with their initial suppliers and customers. In the early growth phase, the knowledge about markets and locations outside the region of origin increases due to a process of learning that is enhanced due to the expansion of its initial geographical market area. This enables the firm to enter new markets with lower risks than before, due to improved knowledge on these markets. In a sequential fashion increasing knowledge about foreign markets leads to increasing commitments in foreign markets (sales and/or direct investments), and so on. The firm also needs to become multiregional or multinational because increasing competition or a too slow rate of growth in the home-market forces the firm to sell to and establish itself in other markets. These new locations may also lower the production and distribution costs of the firm. Corporate reorganizations in the growth syndrome phase, caused by external or internal forces, often involve the reduction in both domestic and international operations[9]. In the accumulation phase the production capacity has grown to such an extent that location constraints force the decentralization of production and the setting up or acquisition of branch plants outside the region or country of origin. The firm is also better able to access foreign markets due the accumulation of financial resources and the increased knowledge of these markets. In table 2 we have summarized these expectations[10], based on the development phases (rows) and the studies on spatial development.

Table 2 Development phases and spatial development

Development phase	**Spatial development**
Start-up	Unilocational
Initial survival	Unilocational
Early growth	Expansion within the home region and/or new (inter)national branches
Growth syndrome	Closure of national or international branches
Accumulation	New (inter)national branches

What implications do these studies on spatial development have for the analysis of the spatial organization of new firms? All these studies on spatial development share a focus on investment decision-making under uncertainty, with learning and increasing resource commitments during the

[8] These models can be found in Vernon (1966; 1979), Taylor (1975), Johanson and Vahlne (1977), Håkanson (1979), and Dicken (1992).

[9] An unsolved issue is the relation between becoming multiregional or multinational and the development paths of young enterprises. According to Hugo and Garnsey (2002, p.24-25) sustained growth of young technology-based enterprises requires a move into export markets. Such a move often makes heavy demands on young enterprises' resources and competences, and related co-ordination difficulties may cause a growth interruption.

[10] The studies on spatial development depict a probable development sequence. However, the actual spatial development of new firms is also the consequence of unforeseen environmental interactions and voluntary strategic choices that can hardly be determined in advance. The recognition of these "critical singularities", path dependence, and interactions of open systems is central in the study of complex adaptive systems (see Garnsey 1998b; Lichtenstein, 2000; Fuller and Moran, 2001). Next to these contingencies during the life course, the prior knowledge of the entrepreneur and other founding conditions may cause significantly different development sequences in time and space.

life course of firms. These studies are helpful in analysing the locational adjustment of new firms, especially becoming multinational. Although these studies provide insight into the locational adjustment of enterprises on multiple spatial levels, locational flexibility is only dealt with as relocation within the region, most likely during the early growth phase (see also Pellenbarg, 1995). So we still do not know much about locational flexibility on a supra-regional level. Relocation decisions of firms are mainly determined by firm internal factors, so a life course approach should explain these locational changes to a large extent (Pellenbarg et al., 2002). The models in these studies have been constructed with 20th century manufacturing firms in mind, and one might wonder whether these insights apply to the 21st century knowledge-based enterprises (cf. DiMaggio, 2001; Garnsey, 2001) in a globalising, learning economy (Lundvall and Borras, 1998). Furthermore, these studies have a rather atomistic view of actors, mainly neglecting the role of inter-organizational and personal network relations in locational changes.

3. Research design and methods

The empirical part of this study is based on intensive research (Sayer, 1992) including comparative case studies (Eisenhardt, 1989; Yin, 2003). Concrete events have been studied that may be unique to some extent. However, "[t]he focus is not on how or why something happened but on how or why something happens" (Mohr, 1982, p.5). We are looking for mechanisms that explain the spatial development of new firms. The abstract knowledge resulting from insight into these mechanisms may be more generally applicable (Sayer, 1992, chapter 9; Hedström and Swedberg, 1998).
We have used a combination of quantitative and qualitative methods. We registered the general characteristics of the entrepreneur, his network relations, the firm, inter-organizational relations, and their locations. The qualitative method involved a life history of the firm as told by the entrepreneur (Van Geenhuizen et al., 1992). This life history has been explicated with a critical incident technique (Tjosvold and Weicker, 1993; Chell and Pittaway, 1998). Next to the quantitative data derived from the interview other data from company archives, the press and other media was collected.

The spatial organization of evolving firms consists of the dynamic **constructs** of locational adjustment and locational flexibility, which refer to the adjustment of the spatial organization of evolving firms outside the headquarter (the location at which the entrepreneur/owner-manager executes his activities) of the firm and to the flexibility of the location of the headquarter respectively. With these two dimensions the tendency towards concentration or dispersion of the firm can be observed (cf. Storper, 1997, p.299-300). The spatial development of new firms consists of the sequence of locational events. Locational events refer to the changes in the state of the spatial organization of firms. The different types of locational events were coded in order to find typical

sequences of locational events (cf. Abbott, 1995). Figure 1 shows the two dimensions in the dynamics of the spatial organization and the locational events involved.

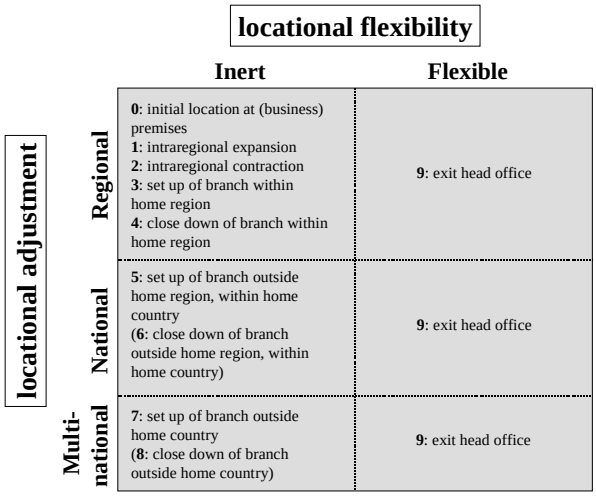

Figure 1 Locational flexibility and locational adjustment

Research sample

The sampling was based on a nested, three-stage design. The population was constructed in the first two stages, while in the final stage the research cases were selected by theoretical sampling[11].

In the first stage, a population of firms with the characteristics of *gazelles* was constructed (see Stam, 1999). The firms in the population had to meet three criteria. First, the firms had to be independent and privately held (owner-managed by (one of) the founder(s) with a majority stake in the firm). Second, firms had to be young; that is, they had to be between 5 and 11 years old. They could not yet be considered fully mature, but at least they had survived the first 4 years of existence - which are generally characterized by the highest failure rates. Third, to be a gazelle the firms had to have generated at least 20 full-time equivalents, which is a rough indicator for company success, and also means that the nature of these firms has changed. The firms were selected from the database of the Dutch Chambers of Commerce (1999), which is the most complete database of firms in the Netherlands. At the end of the first stage, the firms that did not belong to propulsive industries were removed from the database, which yielded a reduced population of 1295 gazelles in the manufacturing and business services. The firms had to belong to propulsive industries, in order to exclude firms that were predominantly oriented on the local market, and thus almost per definition not able to relocate out of the region.

[11] The cases were chosen for theoretical, not statistical, reasons (see Glaser and Strauss, 1967).

In the second stage, this population was further refined by excluding firms that were known to be branches (such as branches of Philips) or more than 11 years old. The remaining firms were all contacted by telephone to ensure that they really belonged to the population, and to find out some of their basic characteristics (such as relocations, number and location of branches, founders, and so forth). The outcome of the second stage is shown in table 3.

Table 3. Second stage of sample selection

	minus:	(sub)total:
Database population		**1295**
Does not belong to the research population	130	
		1165 (100.0 %)
No response / inaccessible	345 (29.6 %)	
		820 (70.4%)
Refused to cooperate	430 (36.9 %)	
		390 (33.5 %)
Completely externally owned *or* founder no longer active in the firm	216	
Research population:		**174**

The second stage led to a research population of 174 gazelles, in manufacturing and business services, which were not completely externally owned, and in which (at least one of) the founder(s) was still active. According to the response to the telephone survey, 55 per cent of the firms had moved after their start, but only 4 per cent had moved out of their region of origin: that is to say, by more than 50 kilometres from their original location. These figures are comparable to outcomes published in similar research projects on relocation (Van Steen, 1997; Stam and Schutjens, 2000). We chose to set a radius of 50 kilometres from the firm to define its region (cf. Vaessen, 1993, p.96); other authors have chosen administrative areas as the demarcation of a region (such as the province, or Chamber of Commerce district), mainly for pragmatic reasons. The theoretical reasons for choosing firm-specific regions with a radius of 50 kilometres are that this area covers most of its labour market area (Schutjens et al., 1998) and most of the entrepreneurs' daily contacts (Sweeney, 1987).

The research population defined in the first two stages was the population from which the research sample in the third stage was drawn. In the first instance, the study was focused on the reasons for evolving enterprises to stay in their region of origin, because of the practical concern of regional policy makers to keep these promising enterprises within their regional borders. The theoretical relevance related to the fact that, in general, only relatively local and not long-distance relocations have been studied. We started to select new fast-growing firms that had left their region of origin: only eight locationally flexible, new fast-growing firms could be traced. Butterflies do indeed hardly leave their region of origin. The initially selected group of eight locationally flexible new fast-growing firms were matched with firms within the same sector and region of origin, but which had not left their region. These matched firms were also fast-growing (same age and size class) and owner-managed. In addition to these new fast-growing firms, similar firms that had not grown were selected as matched (micro) firms. The non-fast growing new firms had to satisfy the same criteria,

with exception of the size: they had to have created at most 5 FTEs. Not all of these pairs could be completed: no match was available either in the research population resulting from the second stage (new fast-growing firms), or in the Chamber of Commerce database (micro firms). The final sample consisted of 25 new fast-growing firms, and 8 new micro firms in four propulsive industries, namely professional business services, biomedicals, graphics-media, and shipbuilding.

4. Spatial development of new firms

The sequence of locational events of a new firm make up its spatial development. The path of each firm starts at the start-up phase and can be traced through other phases in the life course. In general, locational events involve the organic growth or decline of firms, but acquired growth may also be involved. See table 5 in the appendix for a complete overview of the 128 locational events in the research sample. How does the development of new firms in time relate to their development in space? In the next subsections we present the analysis of the spatial organization of new firms in general and new fast-growing firms in particular in the different development phases. We also give some illustrative examples from the case studies.

Start-up

As expected the start-up phase is highly conditioned by the occupational and private biography of the founder-entrepreneur. The start of a firm is typically triggered by the entrepreneur's dissatisfaction with the former occupation (cf. Noorderhaven et al., 2003), or the recognition of an opportunity.

In most cases, the start-up location just came about; entrepreneurs start near, or even in, their home or former workplace. Or, as the entrepreneur of firm H stated: "if you have nothing [at the start of the enterprise] you prefer to stay in your well-known environment." A business site outside the living or former working region is almost never taken into consideration. The limited access to resources and high uncertainty in this development phase make it logical not to invest too much time or money in the location and location choice of the enterprise. When there is sufficient certainty about the future prospects of the business and the entrepreneur already has adequate resources to invest, or can acquire financial resources on the capital market, a formal business site within the home region of the entrepreneur may be hired or bought. The choice of a certain location within the well-known area of the entrepreneur is often quite random, sometimes steered by the entrepreneur's knowledge of locations, or by premises provided through personal relationships.

A location in the entrepreneur's home region is most probable, because of three mechanisms. First, entrepreneurial opportunities are localized, not universal. Different people have access to different information and entrepreneurs discover opportunities in markets with which they are familiar, most likely in or near their former working and living environments. Second, since the business will not yet

have generated any profits, the location choice is likely to be conditioned by personal motives and networks. These are related to other persons in the home region, such as family, friends, and professional networks. Third, the amount of resources to invest is likely to be small, leaving a small range of local or even home-based locations to consider for the initial spatial organization.

Some new fast-growing firms in this phase expand *in situ*, or within their region of origin in anticipation of future growth, or because of growth enabled by external resource providers. Promising biomedical and ICT firms can attract large sums of investment capital in the start-up phase and can use these to realize the necessary locational changes before they generate resources themselves. These locational changes can also be realized when entrepreneurs have access to relatively many financial resources, because they have sold their former business or shares from their former employer. In these circumstances, the usual shortage of resources, and thus low frequency of locational change in the start-up phase, does not occur. So, new fast-growing firms that have access to or can mobilize substantial resources during the start-up phase are able to realize locational changes in that development phase.

Initial survival

The initial survival phase is characterized by the necessary mobilization of resources and the subsequent generation of resources. These two development processes make it probable that the location of the enterprise is no longer suitable for the functioning of the business, so that a more efficient and effective location has to be found. The search for this new location is mainly affected by three mechanisms. First, the entrepreneur remains the most important actor in the firm and the entrepreneur's business life and personal life is strongly intertwined, so personal motives and networks enable the search for a new location with information and resources provided by network members. This social action might however also constrain changes in the spatial organization, because of personal motives involving certain idiosyncratic preferences and the wish to stay close to other important persons such as family members and friends. However, there may be some tension between the private and business life of the entrepreneur in this phase. The firms that have movee from a home-based location to a business site in the initial survival phase made this decision because their business life became too intermingled with their private lives, or because the enterprise needed a more professional identity, which is reinforced by location at a formal business site. We found that such a formal location increased the legitimacy of the firm and that made it easier to attract new customers, or resource providers. The identity of the firm becomes clearer. This factor also explains the move to a more recognizable site in this phase. For example, the entrepreneur of firm B stated:

> … physical presence is important for a certain sense of reliability: are we involved in a relationship with some arbitrary post-box holder in Curacao, or can I knock on the door and when I get angry can I

meet someone? I understand feelings like that; I would not readily do business with enterprises that only have a post-box.

The second mechanism involves resource dependence: important customers that are responsible for a major part of the resources generated may to a large extent condition change in the spatial organization. Third, the resources that are generated in this phase may broaden the scope of investment opportunities and thereby stimulate locational change. The product market in which the goods and services are sold eventually determines whether production and sales of goods and services from the chosen location is viable. In this phase the small volume of production and sales makes the opening of new branches improbable, but the enterprise may be relocated out of the region of origin if in some way this region does not encourage the profitable activities that the entrepreneur wants currently or in the near future. Such relocation only happens when the other liabilities of the mechanisms discussed are not activated. The firms d and G even moved out of the region to locate at business premises for the first time. However, their new locations were within a region in which they had previously been working (enterprise G) or living (enterprise d). Most of the firms that have already moved to a business site in the start-up phase do not change anything in their spatial organization. Of course, all micro firms stay in the initial survival phase (see table 5).

Early growth

Most new enterprises remain in the initial survival phase if they do not fail in the early years of their existence. A small group of new enterprises not only survives, but also grows considerably. These enterprises enter the early growth phase, because their initial product is so successful on the market that they generate a surplus of resources, or because they have recognized new opportunities that are developed next to the initial product-market combination.

The early growth phase is one full of locational dynamics. An inherent characteristic of this phase is the need for expansion space as a result of an increase in human resources or production facilities. The probability that this expansion is realized in the same region is high, because the personnel can be more easily retained and the real estate market within the region is best known. If this need cannot be fulfilled in the vicinity, or if there are organizational, marketing, or labour market factors that make expansion outside the region more desirable, setting up a branch outside the region is considered and possibly realized. Next to this problemistic search, the recognition of new opportunities may also involve the start of new branches. Entrepreneurs in growing firms who decentralize the locus of decision-making enable other members to take locational initiatives. These may improve the satisfaction of employees and increase the number of product-market opportunities recognized. Employees can take action to improve the accessibility of the workplace by starting new branches closer to their homes. The ability of the enterprise to retain and attract valuable employees will thereby be improved. More opportunities can be recognized and realized if not only the entrepreneur,

but also key employees take locational initiatives related to these opportunities. These may lead to the growth of the firm. Setting up new branches is also made possible by reinvestment of the surplus rents generated by growth. Whether serious consideration is given to setting up these branches within the region or country of origin or even outside the country of origin depends on a combination of the prior experience of the entrepreneur and the nature of the product markets that are served. An entrepreneur with some business experience in other regions or countries has an increased probability of setting up new branches there. A substitute for this knowledge can be the presence of a branch of an important customer who has already been served in other regions.

International expansion of firm N

For firm N, the prior experience of the entrepreneur and the nature of his product market explained a large part of the international expansion. The entrepreneur had some experience of working and living abroad before he started his enterprise. In the first instance, important Dutch customers in Southeast Asia were followed. After these branches had been opened, the enterprise also started to serve new local customers. The entrepreneur of firm N rationalized the increased involvement in this part of the world as follows: "We have started there and that feels quite good. That turned out to be the situation until now. So you could also say: why don't you start in South America? Well, we haven't been there yet." This is a clear case of cognitive path dependence.

Other firms just open a branch in an area where they have already started to sell their products or services, but where they perceive an opportunity to gain a stronger foothold, or to serve their existing clientele in a better way. Professional business service firms in particular start new branches within and outside the region in this phase in order to attract or retain professionals; sometimes the firms are stimulated by an organizational structure in which the business units have a maximum size.

The internal selection – i.e. location decision-making process – determines which of the many locational initiatives will be realized. Three mechanisms explain the outcome of internal selection. First, the growth of the enterprise often involves investments that are not, or at least far from fully, recoverable: sunk costs. These investments may be made in physical and human resources that are fixed to the current location, or at least the current region. These sunk costs make it reasonable to retain large parts of the spatial organization and thus particularly constrain the locational flexibility of the firm. The second mechanism enables more changes in the spatial organization. As enterprises in the early growth phase create surplus resources these may be directed to finance new locational initiatives. Third, through organizational learning and the attraction of new human resources, the firm may acquire the competence to realize more complex forms of spatial organization, for example a multiregional or even multinational spatial organization. Taking into account these characteristics of locational initiatives and internal selection during the early growth phase, it is highly probable that a

firm will move into larger premises within the home region and open new branches there, or in other regions in the country. If few location-specific sunk costs are involved, the firm may also choose to relocate to a better-suited location outside the region of origin.

Firms that are able to conduct their business without office or production space even until the early growth phase do not accumulate many sunk costs and may have employees that are relatively widely spread over the country. These factors have been observed in professional business service firms that have left their region in (or just before) the early growth phase to enter their first formal business location.

Growth syndrome

If for some reason the necessary development processes stagnate and the firm cannot solve these problems adequately in the short term, a *growth syndrome phase* sets in. The problems that emerge in this phase sometimes call for a solution that involves the closure of certain locations; more rigorously, only disinvestments can save certain firms in this phase. The growth syndrome phases are characterized by a high degree of *status quo* in the spatial organization. Not much changes in the spatial organization, because other problems absorb all the attention and the situation of the enterprise is uncertain. The closure of branches did not often occur in the group of firms studied, but if it happened it was most likely to do so in the growth syndrome phase. Of course, branches can also be closed in other phases as the result of a process of trial-and-error in spatial development. Closure is most probable in the growth syndrome phase since the internal problems, or external shocks that led to the entrance in this phase often lead to financial problems. Closing units of the firm may resolve these financial problems. The cause of the internal problems may also be directly related to the operation of these branches since these firms may not (yet) be capable of coordinating a multi-unit firm. In this case most probably branches outside the home region will be closed. The capital market may prevent these closures if new financial resources are provided; important customers or suppliers may be either helpful or lethal should they lend assistance, or create unfavourable payment conditions.

Spatial disinvestments

Enterprises encountering a setback are particularly characterized by relatively many disinvestments: branches outside the region of origin may be closed, because the new market fails to make these branches viable (the burst of the internet bubble in the case of enterprise M), or because the firm (mainly the entrepreneur) was not able to coordinate a branch at a distance (enterprise C). It is not completely clear whether these disinvestments were the cause or the effect of a growth syndrome. We do know however that they were related: in both firms the growth syndrome was caused by the same factor as the disinvestments, namely a lack of coordination competence in firm C and a collapse of the market of one specific business unit in firm M.

The investment made by firm W in the growth syndrome phase in anticipation of future growth was very risky, because of the lack of financial resources.

Accumulation

Finally, the very small group of firms that actually manage to grow constantly on an independent basis enter the accumulation phase. This accumulation may be based on new opportunities that have been recognized and realized, or the surplus resources generated through market leadership, for example. In some cases, firms that wanted to enter the accumulation phase have discovered through experience that they could not realize this on their own, or if indeed they can, not fast enough. These firms have decided to become taken over by another organization. This takeover also brought the solution to some spatial problems.

The locational initiatives in this phase are often opportunity driven, but they may also be solutions to shortages of production or office space. In this phase, even more sunk costs are accumulated than in the early growth phase, constraining the closure of branches, or the removal of the main office out of the region. Two other mechanisms enable changes in the spatial organization, even more than in the early growth phase. First, the accumulation of resources creates excess capacity, financial as well as managerial, that can be used for realizing locational initiatives. The relatively large amount of financial resources also makes it possible to take over other firms and so to expand into other regions. Second, more organizational learning and the attraction of more and perhaps superior human resources improve the competence available to realize the setting up and coordination of new branches over longer distances. Next to these two mechanisms, the realization of a multiregional spatial organization may also ease the relocation of the main office out of the region of origin. If the firm was already multiregional, the sunk costs effect might not be of a large magnitude, since the location-specific investments in physical or human resources would be relatively small, or would be taken over by another branch in the region of origin. The personal networks in which the entrepreneurs are embedded are very important for explaining the (lack of) spatial flexibility of the new firm. But, when the firm develops into the accumulation phase, the entrepreneur and the firm become less intertwined (the firm increases in size and complexity, especially when it has become

multilocational). This means that the embeddedness of the entrepreneur in personal networks becomes less important as an explanation of the spatial organization of the firm.
The external selection environment in this phase can to some extent be resisted. New branches that cannot survive on their own in their specific selection environment may be retained, because resources transferred from other parts of the enterprise support them. As a result of slack in the accumulation phase, the external selection environment of new units can be resisted for a relatively long period. Although the external selection environment can thus be resisted more than in other phases, the product and labour market in particular still determine whether the production and sales at the locations chosen is viable in the long term.

It has often been stated that growing and larger firms exit their original region more often, because they are less dependent on other organizations and have more resources than small firms to realize such an exit. While this argument may seem convincing, it neglects the fact that these enterprises have also probably accumulated relatively many sunk costs related to internal human and physical resources. This fact holds in particular for enterprises that have made highly location-specific investments that cannot easily be recovered in the case of exit.

5. Towards a theory of spatial development of new firms

A theory of spatial development of new firms has to combine insights on the (short term) location decision-making processes with locational events as possible outcomes and on the (long term) development processes of the firm. In order to explain the (non-)occurrence of locational events, we have empirically separated the effects of willingness and ability to change the spatial organization. A location decision-making process is triggered by the willingness to change, while this will only lead to a subsequent locational change when the firm has the ability to realize this change. The ability to realize this change is assessed ex ante (before the locational event) by a decision-making ('selection') process within the firm and ex post (after the locational event) by selection in a market system[12] (cf. Loasby, 2001). The central research question then becomes: do firms that have not become multiregional or left their home region lack the willingness or rather the ability or both?

In table 3, we have summarized the key conditions and mechanisms in locational change per development phase. If it is to be valuable, a new theory needs to generate new predictions, or explain phenomena that the theories it integrates or competes with are not capable of explaining. In our view, the added value of the emerging theory of spatial development of new firms is fourfold. First, most

[12] See Stam (2004a; 2004b) for a discussion of evolutionary models of locational change.

location theories focus on size or age as independent variables, while this theory takes the development phases as the point of departure. This distinction is particularly relevant in considering the different processes that dominate specific phases. Second, the theory separates the willingness (consideration) and the ability (realization) of locational changes in the decision-making process. Third, this theory takes simultaneous account of the internal and external evolutionary processes related to location. This factor explains why new fast-growing firms facing similar external selection environments reveal different locational behaviour. Fourth, this theory explains the difference that entrepreneurs – as human agents – make in the locational evolution of evolving enterprises. This factor is particularly relevant for explaining locational initiatives and internal selection in the early development phases. Entrepreneurial opportunities and the willingness to change have been revealed as important explanatory factors in this respect.

Table 3 Development phases and explanations of spatial organization

Development phase:	**Willingness:**	**Ability:**	
		Ex ante	*Ex post*
Start-up	entrepreneurial opportunity	social action; investment	capital market
Initial survival	problemistic search	social action; resource dependence; investment	product market
Early growth	problemistic search; entrepreneurial & managerial opportunity	sunk costs; investment; competence	product market; labour market
Growth syndrome	problemistic search	disinvestment	capital market; product market
Accumulation	managerial & entrepreneurial opportunity; problemistic search	sunk costs; investment; competence	product market; labour market

This theory provides explains the spatial development of new firms as the outcome of a process of initiatives taken by entrepreneurs, enabled and constrained by resources, capabilities and relations with stakeholders inside and outside the firm. This process cannot be predicted in advance, as unique individuals and events may drive this process, and firms develop in their own path dependent mode. However, this does not imply any determinism as firms may learn and thereby create new capabilities that enable, and possibly constrain, the recognition and realization of new locational initiatives. The resulting locational events may in turn give rise to new initiatives.

6. Discussion and implications

How and why do new firms develop in space during their life course? Location theories until now have mainly presented a passive and faceless view of the new firm. Such a view neglects the role of entrepreneurship and the increased importance of human resources in the explanation of the location of new and fast-growing firms. In order to incorporate these issues, we presented new conceptualisations of new firms and their spatial development. These conceptualisations were

confronted with empirical findings of a field study of new and fast-growing firms. We explored the sequence of locational events during the early life course of new micro firms and new fast-growing firms. As expected, the micro firms do not change their spatial organization very much, in contrast with most fast-growing firms. The exploration of the relationship between development in time and locational events showed that specific locational events were related to the characteristics of development phases.

In order to address the 'why' question, a theory of spatial development has been proposed that explains the dynamics of the spatial organization of new (and especially fast-growing) firms during their life course. This theory explains why different types of locational initiatives emerge and whether or not they develop into a locational event, and which markets are most relevant as external selection environments during the life course of new firms. In contrast to the expectations based on the literature, new firms already expand in the start-up and initial survival phase, and some even relocate outside the region of origin, because the entrepreneurs recognized entrepreneurial opportunities. However, if entrepreneurs considered at all to move out of their region in these phases, they mostly decided to stay in that region due to highly valued personal relationships in their region of origin. Relocation out of the region of origin in the early periods of the life course has other explanations than such relocations in later periods, as for example the personal relationships of the entrepreneur are not so important in later phases of development. So called "late-movers" are less able to move due to high sunk costs in human resources, but the ones that realize such a move have built up a multilocational organization in which this sunk cost 'force' is circumvented because they still leave behind a branch in their original region of origin.

Many firms in the early growth and accumulation phase do not become multiregional or multinational, like expected in the literature, because they can easily expand and reach extra-regional markets without having a physical foothold in those regions. Another explanation is that these firms have been able to contract employees that are located far away from the headquarter of the firm, and in that way act as 'virtual branches' while they are working at home or at the site of customers. In contrast to our expectations based on the industrial cluster literature, interorganizational networks are not important at all in the explanation of the spatial organization of new firms. Only during the early phases these interorganizational networks possibly constrain the location behavior of new firms, but these firms hardly ever considered to change their spatial organization. This is one example in which the distinction between willingness and ability to change the spatial organization in a life course perspective offers new insights into the explanation of the location of firms.

In conventional analysis, internal and external factors associated with the location of (new) firms are dealt with in separate disciplines with a disjuncture between micro and macro analysis. We have tried to overcome this, and especially the neglect of firm-internal factors in the explanation of the location of firms. However, this has its price. One aspect that has been relatively neglected in this study is the role of the spatial environment, e.g. the role of amenities (important for knowledge workers, see

Gotlieb, 1995; Van Oort et al., 2003) and the institutional environment (cf. Gertler, 1995; 2000; 2003). Although the personal and inter-organizational relations taken into account already define the nature of the environment to a large extent.

We have explained why butterflies in general do not leave their region of origin, but have also explained why there are some – exceptional – cases of exits out of the region of origin. On the one hand, in the current 'globalising, learning economy' we should not stick to too physical conceptions of the firm, as many opportunities are recognized and realised without any change in the *physical* spatial organization of the firm. On the other hand, these butterflies are more tied to their region than might be expected on the basis of atomistic conceptions of the firm.

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Appendix:

The path of each firm starts at the start-up phase and can be traced through other phases in the life course. In general, locational events involve the organic growth or decline of firms, but acquired growth may also be involved. The addition of an 'A' to the relevant code means that a change in the state of the spatial organization goes hand in hand with acquired growth. For example, 'A5' signifies the acquisition of a firm outside the home region. Some locational events occur simultaneously, for example '90' means exit from home-based to business premises outside the region of origin; '94' means shifting the main office to a branch outside the home region and the closure of the former main office (then a 'branch' in the initial home region).
Several firms did not start at business premises, but remained home-based until the initial survival phase (firms c, d, C, G, and M) or even longer (firms J, K, L, and b). Within the group of locationally adjusted firms a subdivision into two categories can be made: one-off locationally adjusted firms and multiple locationally adjusted firms (underlined in table 5). This subdivision could not be made within the group of locationally flexible firms, since none of them made multiple exits. Second, there are firms that fail to remain national (firms C and X) or multinational (firms A and M); these firms are placed between [brackets] in table 5. The paths in space are named after the most distant state in the spatial organization that has been reached once. The group of locationally flexible firms can be split into two subgroups: "early leavers" (firms U, d, G, K, and L) that move out of the region before they grow and "late leavers" that have grown substantially and have already become multilocational (firms B, H, R, and X) before they leave or during their relocation.

Table 5 Locational events and spatial development

Path type	Firm	Start-up	Initial survival	Early growth	Syndrome	Accumulation
Inert regional (IR)	**D**	0		1		
	F	0		1		
	J			0		
	O	01		1*		
	P	0		111		
	Q	0111				
	S	0	1			
	T	0	1			
	V	0		34		
	W	01**			1	
	Y	0		A3		
	a	0				
	b		***			
	c		0			
	e	0	1			
	f	0				
	g	0	1			
	h	0	1			
Inert national (IN)	**[C]**		0	15	6	
	E	0		111		11A511
	I	0		515		
Inert multinational (IM)	**[A]**	0		1537851		
	[M]		0	1355	#88	357777
	N	01		1757		57
Flexible regional (FR)	**U**	01	9			
	d		90			
Flexible national (FN)	**B**	0		1553153		55596
	G		90	1		5
	H	0		A39		A55A5A5A55##
	R	01A95				
	[X]	0	5	94*		
Flexible multinational (FM)	**K**			90177		
	L			90111		7

* after growth syndrome; ** after initial survival; *** stays home-based
# after accumulation; ## and at least 10 more new and acquired branches