ACADEMY OF ENTREPRENEURSHIP JOURNAL
EUROPEAN EDITION

CONTENTS

LETTER FROM THE EDITOR

Welcome to the first issue of the *Academy of Entrepreneurship Journal, European Edition.* Each of the articles in this issue was presented at the RISE'96: Research on Innovative Strategies and Entrepreneurship Conference. That Conference was sponsored by the University of Jyväskylä and the Academy of Entrepreneurship in June, 1996, in Jyväskylä, Finland. These articles were selected by the distinguished panel of American researchers listed in the Editorial Board as the best papers presented at the Conference. These manuscripts represent outstanding work in the entrepreneurship discipline and we are extremely pleased to be able to bring them to you.

THE ACADEMY OF ENTREPRENEURSHIP

The Academy of Entrepreneurship is a non profit association of scholars and practitioners in entrepreneurship whose purpose is to encourage and support the advancement of knowledge, understanding and teaching in entrepreneurship throughout the world. The *Academy of Entrepreneurship Journal* is the principal vehicle for achieving the objectives of the organization. The editorial mission of this journal is to publish empirical and theoretical manuscripts which advance the entrepreneurship discipline. To learn more about the Academy, its affiliates, and upcoming conferences, please check our WEB page: http://www.wcu.edu/cob/faculty/conf.html

THE EUROPEAN EDITION

It is our intention to publish a European Edition annually featuring the work of European researchers. This Edition has been made possible through the generous support of the University of Jyväskylä and we are indebted to that institution for its fine work in encouraging entrepreneurship research and in supporting our efforts to disseminate entrepreneurship knowledge.

As Editor of the European Edition, I would like to extend my appreciation to the authors featured in this issue and to the participants at the RISE'96 Conference. I am indebted to the University of Jyväskylä for supporting me in this endeavor. I invite comments and inquires from readers. Please e-mail me at koiranen@kosti.jyu.fi or FAX me at 358-14-603331.

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LOCAL SUPPORT FOR TECHNOLOGY-BASED SMES TWO SCANDINAVIAN CASES

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ABSTRACT

The purpose of this paper is to describe two successful programs, SMIL (Sweden) and Spinno (Finland) that have been developed to support the start-up, growth, and consolidation of small technology-based firms. Over the years, it has been recognized that the physical facility alone, combined with institutional embeddedness, does not guarantee success. Active hands-on development programs and other such activities are required to complement the physical setting, in order to successfully support small technology-based firms. As the emphasis of infrastructural support arrangements is shifting from configuration orientation to process and development orientation, new approaches are required for the analysis, identification, and diffusion of successful practices. The new emphasis on processes calls for more dynamic research methods to complement the rather static, configuration oriented ones. Through a comparison of the two models, the paper identifies and discusses context-specific good practices and more universally applicable good practices.

INTRODUCTION

The recent years have witnessed a proliferation of policy measures and organizational arrangements geared to supporting and strengthening regional communities of SMEs, technology-based SMEs in particular. The high perceived potential of this group of firms as sources of innovation and as employment generators has provided a strong inducement for European, national, and regional policymakers to favor such measures. To satisfy businesses' demand for resources (e.g., capital, information, and facilities), an extensive network of infrastructural arrangements has been set up in the Scandinavian countries. These include government funding agencies such as NUTEK in Sweden and TEKES in Finland, infrastructural arrangements, such as science parks, business incubators, and local support programs such as SMIL and Spinno. SMIL and Spinno will be discussed more in detail in this paper.

This physical infrastructure devoted to supporting the emergence and consolidation of SMEs thus represents a sizable investment. It is in the best interest of everyone that this investment produces as high a return as possible. So far, as an example, the experience in

many science parks, in Scandinavia and elsewhere, has been rather disappointing, at least if measured against the most optimistic expectations (Massey, Quintas, & Wield, 1992; Kauranen, Takala, Autio, & Kaila, 1992; Monck, Porter, Quintas, Storey, & Wynarczyk, 1990).

The problem with the existing situation is that some of the infrastructural arrangements turn out to be successful, while many obviously do not. The successful support measures receive much publicity in the press, in conferences, and in workshops. Our belief is that many of the good practice lessons distributed in the media may be biased in the sense that the influence of local, context specific factors is either neglected or is given only limited attention. We believe that there is still a need for empirical analysis that strives to analyze the influence of local conditions on the success of local support measures for technology-based SMEs, and to identify truly universal good practices.

AIM AND SCOPE

The success of infrastructural arrangements, such as science parks and business incubators, has been in the focus of numerous studies since the early 1970s. A pioneering study in the area was carried out by Money (1970), who studied the success of American science parks in 1970. Money's (1970) study was later complemented by studies by Danilov (1971), Baughman (1981), Minshall (1984), and Smilor and Gill (1986). In Europe, most of the early studies on science parks were carried out in the United Kingdom (Monck & Segal, 1983; Moore & Spires, 1983; Williams, 1984). One of the first Scandinavian studies focusing explicitly on the success of science parks was carried out as a feasibility study for the Otaniemi Science Park in 1985 (Teräs, Byckling & Kaila, 1985).

The early studies on the success of science parks focused largely on identifying the configuration parameters of science parks that were linked with their (perceived) success. In the studies listed above, factors such as proximity of a major university of technology, attractive facilities, good planning, competent and empowered science park management, positive attitude toward entrepreneurship, availability of high quality business support services, availability of venture capital funding, and careful tenant selection methods, were considered as important.

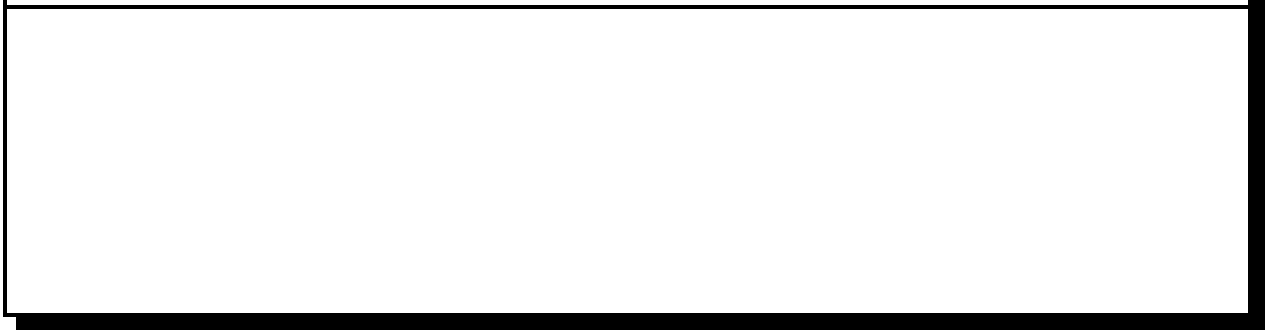
The aim of the early studies was thus very much on contributing to the setting-up of new science parks elsewhere by identifying the key success factors of those established. Their emphasis, however, was a rather static one, with the main focus being on configuration instead of processes. Of the ten success factors identified by Smilor and Gill (1986, p. 24), for example, only one factor, entrepreneurial education, refers to an active hands-on process. The remaining nine belong largely to the set of static configurational parameters. In the other studies cited above, process type success factors were not explicitly addressed.

As experience has been accumulating over the years, it has been increasingly clearly recognized that the configuration of the support mechanism, as embodied in the physical setting, combined with institutional embeddedness, is not sufficient as such. Dynamic software, e.g. active hands-on development programs, is required to complement the static hardware, e.g. the physical setting, in order to actively support the emergence and consolidation of SMEs (Klofsten & Jones-Evans, 1996). This realization has been followed by a proliferation of development programs that actively assist SMEs during the early phases of their life cycle (Laamanen, 1993). Often, these development programs are operated and co-ordinated from science parks or universities.

As the emphasis of infrastructural support arrangements is shifting from configuration orientation to process and development orientation, new approaches are required for the analysis, identification, and diffusion of successful practices. The new emphasis on processes calls for more dynamic research methods to complement the rather static, configuration oriented ones. In order to identify successful processes, the present study has chosen to use the good practice approach, and implement it with two comparative cases of successful local SME support initiatives in Scandinavia. Through the comparison of the two initiatives, one in Finland, and another in Sweden, the present study strives to make a difference between context-specific good practices and more universally applicable good practices.

Our framework for the qualitative analysis of the empirical cases is presented in Figure 1. The framework of analysis is designed to help in discerning the influence of context specific factors on the configuration and success of local support measures for technology-based SMEs.

Figure 1
Research setting



The empirical analysis will identify both locally and universally applicable good practice lessons for SME support arrangements. The analysis will also show how context specific factors can and do influence the configurations and objectives of SME support measures, thus constraining its opportunities for success. We will also show how SME support measures often tend to evolve over time, building new activities around the original core. The empirical

analysis will present lessons both for policymakers and for the managers of SME support arrangements.

The two case studies are from the first European transnational study (funded by the European Commission - DG XIII) focusing explicitly on good practice in university-industry technology transfer. They are the only ones within the survey that focus on support arrangements that are targeted at technology-based SMEs. The cases analyzed below are SMIL (Foundation for Small Business Development in Linköping) in Sweden and Spinno case of Espoo in Finland. SMIL represents a local SME support arrangement that is geared to support the activities of technology-based SMEs in the Linköping region. Spinno represents a development oriented business incubator program that is geared to stimulating the emergence and consolidation of technology-based SMEs from the various universities in the Helsinki Metropolitan region.

THE CASES OF SMIL AND SPINNO

In the following, each of the cases will be briefly presented. After this, the good practice lessons of each case are discussed and compared to each other. Differences and similarities between the two cases will be discussed in the light of contextual differences. Finally, the feasibility and need for local support initiatives for SMEs is discussed.

SMIL: BUSINESS STIMULATION FOR NEW VENTURES AND EXISTING SMES

The data underlying the analysis of the SMIL case was compiled from different sources, using different techniques. The primary source of data is the information compiled over the years from approximately 100 participating firms. SMIL has consistently collected feedback data from its participating firms, asking the firms to evaluate the performance of SMIL. This feedback has been collected by means of mailed questionnaires. The SMIL firms have been asked to evaluate the impact of SMIL from the point of view of the participating firm, indicate the type of problems solved with the help of SMIL, and point out areas for improvement. Feedback data has also been compiled in conversations and discussions with SMIL firms during the course of SMIL activities.

Important feedback data has also been compiled by visiting the SMIL firms and by carrying out informal discussions with the firms. These discussions have had a strong influence on the development of the SMIL stimulation activities. Each of the firms in the SMIL network is visited at least once every two years. This practice also helps SMIL to get to know the new members of the SMIL network. During the visits, a number of topics are addressed. These include, among others, the particular business activities of the firm and the type of stimulation activities that would benefit the firm.

The third main source of information underlying the SMIL case study comprises documents such as minutes from board meetings, activity and business plans for SMIL, and yearly project applications for business financing in CIE (Center for Innovation and Entrepreneurship).

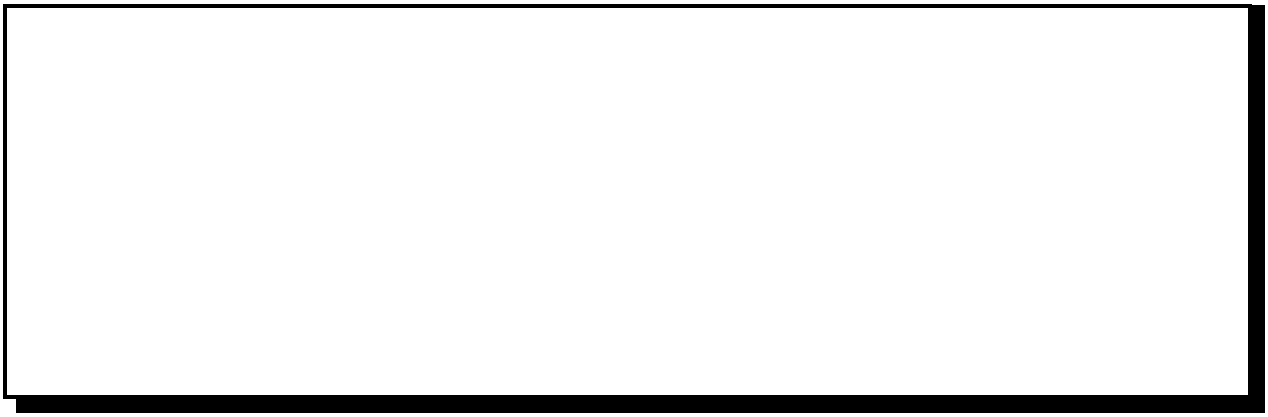
Since the end of the 1970s, hundreds of new firms have been spun off from the Linköping University. SMIL was started in 1984 by a group of business leaders from some of these firms and people from Linköping University, to promote growth and development of technology-based firms , using the experience, knowledge, and network of the firms as a basis for achieving this. SMIL works closely with CIE (Center for Innovation and Entrepreneurship), which is an independent unit of the Linköping University. CIE provides the personnel, offices, equipment, and the main part of the financing, while SMIL provides the network of firms and, by doing this, acts as eyes and ears in discovering the firms' needs of support. Programs and activities are organized in co-operation between SMIL and CIE.

Today, SMIL has some 150 firms in its network, most of which are from the Linköping area. In addition to firms, the SMIL network also includes government organizations, banks, and even a number of private people. The Board of SMIL meets once a month and mainly comprises entrepreneurs from the SMIL network.

The SMIL organizes a wide range of programs and activities for its participating firms. See Figure 2. The SMIL activities comprise both informal ones, such as breakfast, lunch, and evening meetings, and more formal training programs for competence development. The contents of the programs and activities are based upon the firms' real needs and requests.

SMIL offers three types of formal training programs, each tailored for different stages in a firm's development. The first program - The Entrepreneurship and New Business Development Program, is aimed at those considering starting a firm. The participants of this program are students and researchers from different faculties, and persons from technology-based firms in Linköping. The aim of the Entrepreneurship and New Business Development Program is to combine theoretical lectures and practical work in developing a business plan. The program lasts for approximately one year. The intake of the program is no more than 10 - 15 participants at the most. Each participant is given a mentor from SMIL's network and can receive a small contribution to cover the costs of market analyses and meetings with prospective customers.

Figure 2
SMIL Programs and Activities



The Entrepreneurship programs are funded by NUTEK, the Swedish government arm charged with funding technological development in the country. The NUTEK funds are channeled through CIE. The participants of Entrepreneurship programs also have access to the facilities of the Mjrdevi Science Park. Approximately every other participant starts a firm while on the program. In two years, altogether some 15 firms have been started in the Entrepreneurship program.

The second type of program, as depicted in Figure 2, is the Development program for already established firms. In Development programs, tangible problems of the participating firms are analyzed and solved. The range of problems addressed includes personnel policy, ownership strategies, business development, marketing plans, financing, and organization. Each Development program has 6-8 participant firms, each represented by up to three people. The firms work together in groups of three or four and act as advisors for each other. The program takes place during three to four two-day meetings during the course of one year. During this time, other activities such as plenary sessions are also organized, and between meetings, the firms are given individual homework.

The Development program has been well received and constitutes the cornerstone of the SMIL support programs. So far there have been eight Development programs, in which approximately 70 firms have participated. The participating firms emphasize the importance of addressing their real needs and problems during the program. The problems of each participating firm are diagnosed before the program starts, and this diagnosis often suggests that the root of the problems may be elsewhere than initially thought.

Within the third type of program, as depicted in Figure 2, management groups of SMIL firms get together to discuss issues of mutual concern. The issues may range from quality control and market positioning through internationalization and board work. This program is organized in a similar fashion as the Development Program, but the meetings are shorter and held more often. The facilitator of each management group is usually someone from the SMIL network, and external support is used when necessary.

The Development and Management programs differ from each other. The Development programs are more general in nature, and the participating firms can address a range of specific problems, while the Management groups focus on the solution of one specific problem. Another important difference is that the Development program is designed for firms in a somewhat earlier phase of development than the Management program. This is because it is more suitable to first solve a firm's problems on a broader front before concentrating on more specific problems. It is, therefore, an advantage if the participants in the management group have already taken part in one of the development groups.

The SMIL support activities are financed mainly by NUTEK. In addition to NUTEK support, however, a membership fee of 1 500 SEK per year is imposed upon each participating firm, plus an activity-specific fee for participating in the activities. The activity-specific enrollment fees have been gradually raised, which has actually lead to an increased demand for support activities. Today, for example, a firm pays up to 20 000 SEK for participation in the Development program. Because the structure and contents of the Development program vary from year to year, many firms have participated in the program for several years.

SPINNO: DEVELOPMENT ORIENTED INCUBATOR PROGRAM

The data concerning the Spinno program has been compiled from two primary sources. First, the Spinno program has kept records of its spin-out firms throughout its history. This data was used to analyze the economic impact of the Spinno program. During the record maintenance process, as well as during its routine operation, Spinno has regularly collected feedback data from the firms. This data has been continuously used to improve the program.

The other source of primary data consisted of semi-structured interviews. During the course of the practice analysis of the Spinno program, several people were interviewed. These people represented the Spinno organization, its supervisory board, and the Spinno firms.

The Spinno program is a multidisciplinary new business incubator program geared to enhancing the emergence and consolidation of new, technology-based firms in public sector research and educational institutions in the Helsinki metropolitan region. Spinno was initiated in 1990 in co-operation between Otaniemi Science Park, the Technical Research Center of Finland, and the Ministry of Trade and Industry of Finland. Subsequently, the industrial affiliation of Spinno has been expanded to include most of the public sector research and educational institutions in the Helsinki metropolitan region.

The challenge for the organization of Spinno is constituted by the need to maintain a high level of cost efficiency while retaining a multi-disciplinary responsiveness. This goal is achieved by maintaining a network of Spinno contact persons in the participating research organizations. The organizational chart of Spinno is presented in Figure 3.

Figure 3
Organization of Spinno

The organization of the Spinno program combines a high degree of cost efficiency with a well functioning institutional interface. The Spinno program employs only one full-time project manager, assisted by a project assistant.

The Spinno program has been running for five full years. During this time nearly 200 applications have been reviewed, of which 91 applications have been accepted. This acceptance ratio translates into an acceptance rate of 46%. Out of these 91 applications, 70 well functioning new ventures have been launched. In the end of year 1994, the Spinno ventures employed 119 persons full time (n=52) and 42 persons part time (n=34). These figures indicate an average size of a Spinno venture to be 2.3 full time and 1.3 part time employees in the end of 1994. The mean sales during 1994 were approximately 1,1 FIM million (n=54).

Spinno applies a hands-on approach to developing the activities of Spinno ventures. This hands-on approach is crystallized in the two-stage evaluation and selection process that constitutes the core of the operational processes of Spinno. First, there is a preliminary screening of Spinno applicants by the Spinno organization. The first screening is a relatively loose one, approving approximately 50% of the applications submitted to the Spinno program.

The first selection is followed by a six-month training period, during which the Spinno ventures develop their business plans. It is the review of these business plans and the management teams presenting them that constitutes the second stage of the evaluation and selection process of Spinno.

The purpose of the second evaluation is to determine the composition of the tailored long-term support package to be offered for each Spinno venture. The support package can comprise further training and various types of consulting inputs, tailored according to the

needs of each venture. The six-month period between the first and the second stages of the evaluation and selection process ensure that the needs and the potential of each Spinno venture are well known to the evaluators.

The six-month evaluation and selection process makes it possible to support both immature and mature ventures. The latter group mainly consists of industry spin-offs, that may already be operational when entering the Spinno program. Most of the public sector research spin-offs that enter the Spinno program are at very early stages of their development. In most cases, all that exists in the first stage of evaluation is just a product or a service idea, without any kind of proof of its commercial viability.

The two-stage evaluation and selection process is developed to filter out the ideas or inventions with weak or moderate chances for commercial success. After the initial screening, an active hands-on development of the selected Spinno ventures is begun. Combined, these two can be viewed to constitute the value added process of Spinno. The value added process of Spinno is depicted in Figure 4.

Figure 4
The value added process of Spinno

The value added process of Spinno contains several strengths. First, the development-oriented evaluation and selection system is constructed to meet the needs of the two groups of applicants: the ones with clear business plans and the ones that are still in their idea stage. This results in an efficient screening of all applicants. Accordingly, the business development processes are divided into two parts: general training and tailored consulting. The expert panel evaluation functions as a middle checkpoint to evaluate the idea before developing a more important commitment to the venture. Finally, evaluation and screening

is done over a long period of time, which helps discern the real needs of the venture, potentially even such that have not been perceived by the venture itself.

COMPARATIVE ANALYSIS OF SMIL AND SPINNO

SMIL and Spinno represent two successful arrangements geared to enhancing the emergence, consolidation, and growth of technology-based SMEs. They operate in different regions and different national and cultural environments. This obviously affects their objective settings and their modes of operation. One could argue that the different setting and structure of the arrangements make the cases difficult to compare. However, as the aim of the present analysis is to identify universal good practices, we believe that a comparison between the cases is not only useful, but also necessary. It provides the only means for identifying such good practices.

In the following, similarities and differences between the two cases are discussed. Before the comparison between the cases, the contextual differences and similarities of the two cases are outlined. The ensuing discussion will focus on estimating the impact of different contextual factors on the success factors identified.

CONTEXTUAL FACTORS

The contextual differences and similarities between Spinno and SMIL are listed in Table 1. As can be observed in Table 1, the main contextual difference between Spinno and SMIL is that Spinno is a capital region arrangement, whereas SMIL is a typical regional arrangement. This difference is mainly reflected in the type of actors operating in each region. Spinno enjoys the proximity of many universities and research institutes, and can actively tap into the research potential of these. SMIL is more clearly connected to one single university, Linköping University, that has a strong technical faculty. This way, SMIL has been able to enter into an organic, symbiotic relationship with the university, whereas the relationship between Spinno and its affiliated universities is more a networking one. This is reflected in the patterns of communication between Spinno and its affiliated universities: the main role of the participating universities is to feed embryos of new ventures to Spinno, whereas the relationship between SMIL and Linköping University is a more interactive one.

The fact that Spinno operates in the capital region also means that many of the players, with which Spinno deals, are national players. National considerations, and sometimes even vested interests are thus more acutely present in the institutional setting in which Spinno is embedded. In this sense, SMIL has the advantage of operating in a more co-operative setting, where the regional interests constitute the overriding concern of all regional actors.

Table 1
Contextual Dfferences Between Spinno and SMIL

Spinno	SMIL
many universities	one university
one-way feeding mechanism with the universities involved	two-way interaction
capital region	regional industrial enclave
national players present, with partly vested national interests	regional players present, guarding the interests of the region
young high technology enclave	20 year tradition in high technology manufacturing
mostly headquarters of large firms present	manufacturing plants of large firms present
in operation since 1990	in operation since 1984

Another important contextual difference between Spinno and SMIL is that SMIL operates in an established high technology industrial hub, whereas the operational environment of Spinno is typically a young high technology enclave. The airplane manufacturing operations of SAAB have traditionally been located in the Linköping region. Also other major industrial firms have concentrated their manufacturing plants in the Linköping region. Spinno, for its part, has been established in the Helsinki Metropolitan region, where the attitudes toward industrial firms were almost hostile until the mid-1980s. Only recently, because of the economic recession of the early 1990s, the policy of reindustrialization has become fashionable in the region. Importantly, the operational environment of Spinno has, until recently, largely lacked the kind of protective umbrella offered by large systems integrator firms from which the SMEs in the Linköping region can benefit.

SIMILARITIES BETWEEN SPINNO AND SMIL

The space allocation of the present paper does not permit us to provide a full good practice analysis of the SMIL and Spinno cases. The full good practice analysis of the two cases is available at the DG XIII/D/4 of European Commission (Autio & Mäkinen, 1995;

Klofsten, 1995). The similarities, in terms of good practice, between SMIL and Spinno are listed in Table 2. These are the kinds of good practice lessons that seem to be rather universal, and thus, of particular interest for policymakers.

Table 2 Similarities between Spinno and SMIL
• focus on real needs of the ventures
• multifaceted credibility enhancement
• extensive use of external resources
• emphasis on hands-on, tailored management support
• exploitation of synergies between firms and academia
• full time project co-ordinator
• top-level commitment of participating organizations secured
• enrollment fees imposed on participants

Both Spinno and SMIL attach particular attention to focusing on the real needs of the firms with which they deal. Spinno implements a two-phase evaluation and selection process, which allows Spinno to analyze the real needs of the Spinno ventures over a period of six months. SMIL maintains a constant contact with its firms and holds up to one-day meetings in each firm analyzing the specific needs of each participating SME. This focus on real needs is a particularly important one, since infrastructural arrangements, such as SME support organizations often have a tendency to become rather self-sustaining and lose touch with the needs of the customers whom they are designed to serve.

Both Spinno and SMIL have achieved a reputation that is widespread in their respective regions. Both names have become a kind of trademark; names that are considered a sign of quality among regional actors. Because of their participation in the respective programs, SMIL and Spinno firms have much less difficulties in obtaining funding from banks than other new ventures. The credibility enhancement impact of Spinno and SMIL is not limited to financiers and SME support organizations only, however. Spinno and SMIL also make it easier for their participants to establish co-operative relationships with established industrial firms. This is why the leveraging impact is characterized as multifaceted .

Both Spinno and SMIL also attach much attention to enhancing their institutional embeddedness. Through close co-operation with regional actors, both Spinno and SMIL enjoy

good access to external resources, resources that can be deployed for the benefit for participating SMEs.

The emphasis on hands-on management support is linked with the focus on the real needs of the SMEs. This practice is an important one, since it means that Spinno and SMIL are not merely passive distributors of general-purpose information and largely undifferentiated financial support. Instead, they assume an active hands-on role in the development of the operations of SMEs. Surveys of the support needs of SMEs repeatedly indicate that what SMEs are missing is active hands-on support that is carried out within the firm, for the firm (Autio, Jutila & Kivisaari, 1995).

The exploitation of synergies between the firms and academia is very much in evidence in both cases. This practice is a standard element of practically all SME support initiatives that have a link with a major university of technology. As will be indicated in Table 3, however, the patterns of this interaction are different between Spinno and SMIL; a difference which is likely to be partly influenced by the contextual differences between Spinno and SMIL.

The importance of full-time project co-ordinator (an enthusiast) and the importance of top-level commitment in the supporting organizations are lessons that repeatedly come up in studies of this kind.

Finally, both SMIL and Spinno charge enrollment fees to their participants. This is an important way of securing the commitment of the participating SMEs. If no enrollment fees are charged, the level of commitment would certainly be lower. On the other hand, enrollment fees also help maintain the quality of the services offered. Paying SMEs demand value for their money.

DIFFERENCES BETWEEN SMIL AND SPINNO

The differences that could be observed between Spinno and SMIL are presented in Table 3. The differences between Spinno and SMIL are illuminating and are clearly linked with the contextual differences underlying these two programs. Many of the differences also reflect the more symbiotic relationship that SMIL has with Linköping University, as compared with the relationship between Spinno and its participating organizations. As Spinno is more a networking arrangement, there are no really close links with any participating organization. The symbiotic relationship between SMIL and Linköping University, on the other hand, enables Linköping University to derive benefits from it. One example of this is the active use of SMIL entrepreneurs as lecturers. SMIL also participates in the planning of entrepreneurship courses at the Linkping University. In this symbiotic relationship, regional cohesion is clearly enhanced.

Table 3
Differences between Spinno and SMIL

Spinno	SMIL
ventures do not influence university curriculum	participating SMEs influence university curriculum
focus on spin-off and consolidation	focus on stimulation, recently expanded toward spin-off
many universities and interest groups involved	one core university, cohesive group
one-way spin-off feeding mechanism	two-way interactive feedback mechanism between university and ventures
national players present, with partly vested national interests	predominantly regional players with regional interests
light organization with emphasis on contact persons	relatively heavier organization, organic relationship with one university
focus on multidisciplinary ventures	focus on technology-based SMEs only
emphasis on training and hands-on consulting	emphasis on business stimulation and networking between participants

Regional differences also influence the differences in the emphases of SMIL and Spinno. Because Spinno has been started at a young high technology enclave, its emphasis has traditionally been on facilitating the emergence and consolidation of new technology-based ventures. As SMIL operates in an established industrial hub, it has been able to emphasize business stimulation type activities. During recent years, the importance of spin-off activities has been increased in the SMIL program, too. On the other hand, as the number of Spinno ventures has increased over the years, stimulation type activities have been introduced, in the form of workshops and seminars.

Even though the large number of supporting organizations is reflected in the relatively more one-way communication and feeding pattern of the Spinno program, Spinno can also benefit from the multidisciplinary character of the research base made available to it. Spinno ventures are more multidisciplinary in character than are the SMIL firms. This multidisciplinary character of the Spinno program is a clear strength, and it can be exploited in many ways.

CONCLUSIONS

The analysis of SMIL and Spinno suggests that both universally applicable and context specific good practices can be identified in arrangements geared to supporting the emergence, consolidation, and success of technology-based SMEs. The more universal good practices are of particular interest for policymakers, as they can be copied and implemented no matter what the local conditions are. Both cases strongly suggest that much attention should be attached to focusing on real needs of the participating ventures. This simple lesson is forgotten surprisingly often in arrangements supported from public funds. Such arrangements have a tendency of gradually increasing the scope of their activities, and the need to secure funding easily becomes the overriding concern. It is admirable how soon many such arrangements become skilled in verbally justifying their existence, without asking feedback from their customers, however. In publicly funded support arrangements the need to focus on real needs cannot be emphasized strongly enough.

Also the other universal good practice lessons are worth repeating. It is important to root the arrangement in the local context, by creating close links with relevant regional actors. The more varied the ways through which the arrangement creates value for its customers and for the relevant regional actors, the better. An example of such a value creating activity is the credibility enhancement function that was very much in evidence in both SMIL and Spinno. Another example is the exploitation of synergies between the arrangement and academia. Both examples also show that the mere distribution of information is not enough: the participating SMEs must be actively supported, through hands-on, tailored activities.

Accumulation of competencies must also be secured by appointing a full-time project co-ordinator for the initiative. Spinno demonstrated good intuition by creating a large enough research base that justified the establishment of a full-time initiative for supporting the creation of new enterprises. It is doubtful whether the size of the research base of any of the participating Spinno organizations alone would have justified the appointment of a full-time project co-ordinator. In the case of SMIL, a secretariat was made available at the University where one person - an enthusiast - could manage the operation and development of SMIL. This person, because of his position at the University, was able to combine the work in SMIL with research and teaching. Finally, the commitment of the participating SMEs must be secured by charging enrollment fees. There is no such thing as a free lunch. In addition, as the participating SMEs pay for the service, they also demand value for their money.

The analysis of the differences between SMIL and Spinno shows that contextual factors clearly influence the type of good practices that can be observed in SME support initiatives. Practically all of the differences observed between SMIL and Spinno can be attributed to differences in contextual factors. Perhaps the most important contextual difference between Spinno and SMIL is that Spinno has been started in a capital region, whereas SMIL is clearly

a regional arrangement. This difference is reflected in many of the differences that can be observed between SMIL and Spinno.

Another, natural contextual difference between SMIL and Spinno is constituted in the different industrial traditions of the regions where SMIL and Spinno operate. The industrial context influences the objectives set for a SME support initiative, and hence at least the initial orientation of the initiative. SMIL was started more as a stimulation arrangement, whereas Spinno was started as a spin-off program. All in all, therefore, we conclude that the research setting of the present study, as illustrated in Figure 1, is indeed valid and relevant.

The differences observed between SMIL and Spinno, and the two cases in themselves, underline the need to exploit the local situation. Both initiatives have skillfully identified the potential offered by local resources and exploited this potential to their advantage. Thus, SMIL and Spinno not only passively adapt to the local situation: they actively use it.

It is also interesting to observe the gradual evolution in the scope of activities of each initiative. Over the years, SMIL has introduced activities that aim at catalyzing the creation of spin-off firms from the Linköping University. Spinno, for its part, has recently introduced more stimulation activities in its services. On the basis of the two cases only, it is difficult to determine whether these observations signal a more generally applicable tendency among SME support initiatives.

POLICY IMPLICATIONS

The importance of the small and medium sized business sector has been continuously increasing since the 1970s. The study by Brynjolfsson, Malone, Gurbaxani and Kambil (1993) suggests that this trend is likely to continue. Brynjolfsson et al. (1993) convincingly show that the average size of industrial firms in manufacturing and in technical services industries is decreasing, and that this development can be attributed to the diffusion of information and communication technologies (ICT) in industrial structures. Importantly, Brynjolfsson et al. (1993) found that ICT does not substitute for human labor. Instead, ICT affects the balance between internal and external co-ordination costs in such a way as to make outsourcing more attractive for industrial firms. Brynjolfsson and his group's findings thus suggest that the locus of industrial activities indeed is shifting toward networks consisting of large and small firms. As the average size of industrial firms is in decline, the importance of well designed SME policies and well functioning SME support arrangements can be expected to increase accordingly. The emphasis placed upon supporting the emergence and consolidation of SMEs is thus not misplaced.

In the area of SME policies and SME support, the key question is: What does well designed mean? Often, SME policy and SME support are simplistically interpreted as interest-free financial subsidies designed to support the emergence of SMEs. This

interpretation is largely based on the oversimplifying, linear view of the early development of SMEs. This linear view of the early development of SMEs reflects the obsolete, linear sequential view of the technological innovation process. In this view, all SMEs are assumed to be growth oriented and go through the same sequence of stages during their early development. As the new ventures are fragile during their early stages , the reasoning goes, interest-free financial subsidies are called for, especially during the early stages of the new venture. Such reasoning is quite explicitly reflected in the SME support policies of many European governments. In Sweden, for example, the total amount support is about 50 billion SEK which is almost three times as much as that which company taxation provides (Ds, 1995). It is questionable whether such a situation is really an optimal one from the point of view of the economy as a whole.

The dangers of such a simplistic interpretation of SME support needs are quite obvious in the above cited Swedish example. We might add that this example is not an exceptional one, at least not in the European context. Ultimately, there is a real danger that SMEs start considering low-interest or interest-free subsidies as an earned privilege that automatically belongs to them. In such a situation, the focus of attention of the small firm may shift from doing business to applying subsidies. It is not surprising that the debate on the benefits of business stimulation has intensified during the last few years (e.g. Roos & Nylander, 1995).

Empirical studies on the efficiency of SME support arrangements show conflicting results. A recent investigation suggested that academic studies often suggest poor efficiency, while evaluations by the support organizations, not surprisingly, show just the opposite (Roos & Nylander, 1995). Other studies show that certain types of tailored support programs via local support networks can be effective in promoting start-ups and development of technology-based firms (Klofsten & Jones-Evans, 1995). Similar results are shown in Paulin & Ronstadt (1995), who studied a local network called Connect in the San Diego area and concluded that the network has been an excellent instrument to foster technology transfer and entrepreneurship.

The conflicting results as to the efficiency of SME support arrangements can be partly attributed to differences between the linear and configurational views of the development processes in SMEs. Many SME support arrangements certainly are not efficient, if they are expected to catalyze linear growth processes in SMEs. The point that we would like to emphasize, however, is that the development process of SMEs is not a linear one, but rather a configurational one (e.g.; Birley & Westhead, 1990; Meyer, Tsui & Hinings, 1993; Raffa, Zollo & Caponi, 1995). At any point of time, there are several alternative organizational configurations available for an SME, and it may lock-in into any one of these. The linear growth model represents only one alternative sequence of configurations that is available for new, technology-based firms. In SME support, the key is to identify the right configuration and to assist the SME in achieving it.

In our view, SME support arrangements should not be perceived as linear accelerators, the role of which would be to catalyze linear growth processes in SMEs. Rather, local SME support arrangements should be perceived as a kind of regional headquarters of manufacturing and innovation networks, the purpose of which is to assist different types of SMEs to achieve the best possible configuration that fits well with their specific needs. Such a support calls for more tailored, hands-on support that focuses on the real needs of SMEs.

One problem with many existing SME support structures is not that the supply of support services would be inadequate as such. The reality, at least in many European countries, is that the supply of support services is fragmented and confusing for the SMEs. In the Helsinki Metropolitan region, for example, a recent survey found that the lack of information concerning existing support services was considered as the most serious gap, not the adequacy of available support services itself (Autio et al, 1995). There is plenty of demand and plenty of supply of support services, but these do not coalesce very well.

The fragmentation in the existing supply of support services is probably partly due to institutional reasons. Many government organizations tend to prefer to set up new organizations to supply new SME support services, instead of channeling the new service through the existing service provision network. Largely for this reason, a recent EU DG XIII conference in Madrid recommended that the European Union encourage the formation of one-stop-shop type arrangements to make it easier for SMEs to access the service provision network. Naturally, such one-stop-shop arrangements should not become another new service provision outlet in themselves. The DG XXIII conference also recommended that SME support arrangements should set up networks among themselves in order to facilitate the exchange of experiences and to increase interaction between regional SME support arrangements. Such a networking activity, we believe, has important potential to offer for SME support.

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UNIVERSITIES AND ENTERPRISE DEVELOPMENT ON THE PERIPHERY OF EUROPE

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ABSTRACT

Through examining the Republic of Ireland, this paper will discuss how technology can be utilised to develop the competitiveness of the peripheral regions of Europe. It will demonstrate that the domestic technological capability of industry within a peripheral economy such as the Republic of Ireland remains low, mainly as a result of a weak entrepreneurial high technology sector, and the under-utilisation of the university sector in developing linkages with this indigenous industry. In addition, it develops some of the background material for a major European Commission Targeted Socio-Economic Research project entitled, universities, technology transfer and sign-off activities - academic entrepreneurship in different types of European regions.

INTRODUCTION

Peripheral regions in Europe have different economic problems to those experienced in the core of Europe, problems that require quite different economic solutions. This, however, is no easy task, as the long run processes of regional economic development are extremely complex phenomena, and policy makers are currently unable to provide an adequate explanation of the conditions under which economic activities grow and decline and change their locations, industrial composition and relationships within a specific region. Whilst governments in the past have attempted to formulate some types of regional policy programme, such as the promotion of branch plants, support of large industries and protection of agriculture, none of these policy measures (that are still being pursued by some governments on both a national and regional level) have succeeded in laying the basis for self-generated regional growth. Whilst there is a growing awareness of the importance of technological networks at a regional level, especially networks between different actors such as government, universities and entrepreneurial small firms, much of the development of such linkages in Europe, especially within peripheral regions, remains considerably underdeveloped.

TECHNOLOGICAL DEVELOPMENT

Rapid technological advance within a region can give competitive advantages in local, national and international markets, which can result in increased industrial output, employment and prosperity (Cooke, 1995; Saxenian, 1994; Smilor *et al*, 1990). The future competitiveness of industry, and success in accelerating growth and increasing employment, depends on the capacity of firms to innovate in response to changing external conditions, including the continuing rapid pace of technological development (NESC, 1993). In the medium to long term, sustained competitiveness in the global economy will depend on technological or innovation-based strengths, such as the ability to develop new products, to access successfully new markets, to apply new technology, to incorporate best practice in the management of enterprises and to develop skill levels across the full spectrum of the labour force. Consequently, various approaches have been developed to initiate and sustain the development of technological innovation, which include the concept of regional industrial complexes such as 'technopoles' (Castells and Hall, 1994) i.e. planned technology-based developments such as science and technology parks which are planned by central or local government, often in association with both universities and private industry; highly specific financial incentives to support product development within small firms (Moore, 1993), and training programmes to develop the potential of small technology-based firms (Klofsten and Jones-Evans, 1996).

As Walsh (1987) notes, the dependency on technological development for future national competitive advantage may be particularly pronounced within peripheral regions of Europe, such as Greece, Ireland, Spain and Portugal, which need to have a much broader spectrum of R&D capabilities if they are to successfully exploit technologies in industry, even within medium technology sectors. As a result, it is becoming generally accepted that small peripheral countries cannot sustain a development strategy based on relative factor costs (wages, labour, etc.) and must increasingly develop a comparative advantage based on the enhancement and exploitation of the national knowledge base, as in other developed, progressive countries, where science and technology is at the top of the national agenda. As the recent report of the Science Technology and Innovation Advisory Council (STIAC, 1995) in the Republic of Ireland stated, many small advanced countries (especially those in the Nordic countries) have appreciated that their economies must build a capacity to create, absorb, and apply new technologies, whether developed locally or elsewhere. A failure to innovate or, more precisely, to establish a national system of innovation is a significant barrier to the long run competitiveness of peripheral economies (NESC, 1993).

This increasing emphasis by economists and policy-makers on the importance of the generation and availability of new technologies has considerable implications for the promotion of economic growth within the peripheral regions of the European Community (Bradley et al, 1993). The attractiveness of developing high technology industrial sectors has sparked a number of policies to create or generate innovativeness of peripheral regions, and

to upgrade the technological capabilities of local firms through regional innovation centres. Despite this, however, success in the development of innovation has eluded peripheral regions, mainly because of their low innovation potential, which is an outcome of the relative scarcity of R&D carried out there. This is mainly a result of their dependence on branch plants of large, multinational corporations, which tend to have lower levels of highly trained and skilled personnel, certainly lower levels of R&D, and little attention to non-routine activities or new products (Kennedy et al., 1988). As such, the knowledge of available technologies and how to use them may be comparatively poor. Indeed, as Malecki (1991, 314) suggests, there may be only one way of increasing the technological capability and potential of a peripheral region, "It is the entrepreneurial spin-off process which is the principal local route of technology transfer. Indeed, new ideas enter an economy primarily through the identification of opportunities by entrepreneurs. The local nature of entrepreneurship poses great challenges, but it is such a process which was the basis of the successes which national and regional S&T policies are trying to imitate. The process of entrepreneurship may be a more important one to regional and local economies than the process of technological change"

If the processes of technological change and entrepreneurship can be linked, then it may benefit the peripheral regions within the European Community. However, the role that a vibrant indigenous technology-based sector can play in the development of the economy has tended to be neglected by policy-makers within peripheral regions. This reflects much of the recent innovation policy undertaken by peripheral regions in the EC, which has been aimed towards the attraction of the R&D facilities of large firms, with the hope that there will be subsequent spin-off activity, rather than on promoting the development and growth of a strong indigenous technological sector. This policy, in many ways, is contrary to the overall aims of the recent paper on growth, competitiveness and employment (European Commission, 1993), which recognised that one of the significant potential sources of growth for firms in Europe (and thus wealth and employment) are small businesses working in high technology sectors.

SMALL TECHNOLOGY-BASED FIRMS

With the growing appreciation of the contribution of small firms to a healthy national and regional economy, and the concomitant growth in the diversity and complexity of technology, attention has been focused on this relatively new type of small business - the small technology-based venture - which is based on the technical skills and experience of its owner-managers (Jones-Evans, 1992). The emergence of such firms, it has been argued, has been mainly due to changes in both industrial and cultural values, which have encouraged the rapid development of a vibrant small firm sector within technology-based industrial sectors in most developed economies. For example, the increasing use of flexible specialisation and customisation within high technology manufacturing has led to the growth of many small

specialist businesses (Aydalot and Keeble, 1988), especially within high value-added niche markets such as computing, medical instrumentation and biotechnology. In some cases, these firms have been established to maximise the competitive advantages offered by the decreasing costs of micro-processor technologies, enabling them to compete directly with larger organisations (Green and Howells, 1988). Recently, such businesses have gained economic significance for the following reasons:

Technology-based small firms have become increasingly important to future national industrial employment in both Europe (Klofsten et al., 1996; Lumme *et al*. 1994; Oakey, 1991) and the United States (Phillips *et al*, 1991). For example, a recent analysis of employment within the UK high technology industrial sector in the period 1987-1991 found that while total employment in firms with 100 or more employees was reduced by 83,419 jobs, total employment in firms with 1 to 99 employees increased by 26,766 jobs (Jones-Evans and Westhead, 1996).

Generally, various researchers have demonstrated the valuable contribution of small technology-based firms to technological innovation within a number of high technology industrial sectors (Acs and Audretsch, 1988), particularly because of the increased productivity and efficiency demonstrated by such organisations in the use of R&D resources (Monck et al., 1988; Cooper and Bruno, 1977). Such industrial sectors are usually characterised by fast changing markets, low capital intensity and small dependence on economies of scale, and are thus better suited to smaller firms, due to the entrepreneurial nature and lack of bureaucracy in decision making within such organisations (Rothwell, 1994). For example, in the UK, comprehensive research into the relationship between firm size and the level of innovation has revealed that small firms' share of innovations, during the period 1945-1983, had increased by over 50% and now accounts for over a quarter of the total number of innovations in the UK (Robson and Townsend, 1984). Moreover, in many new industries, such as computing services, their contribution is highly significant, as new advances in particular niche areas has presented entrepreneurs with the opportunity to develop many new innovative and market opportunities.

A number of studies show that technologically innovative SMEs have a higher than average growth in assets, retained profits and exports (Wynarczyk and Thwaites, 1994). Moreover, such firms tend to have lower closure rates than businesses in other sectors (Westhead and Storey, 1994).

SMALL TECHNOLOGY-BASED FIRMS IN PERIPHERAL REGIONS

Small technology-base firms make a valuable contribution to competitiveness, employment and innovation within high technology industries. The European Commission (1993) has gone so far as to state that the development of this sector could be a significant

factor in the future growth and renewal of European industrial fortunes. Despite this, the existing evidence suggests that within the peripheral regions of Europe, the development of small technology-based firms still remains somewhat limited (Fontes, 1995). New technology-based firms are a recent, but not negligible trend in less favoured regions, they tend to either remain small and struggling for survival, or they lose their markets and disappear in relatively short periods of time (Tsipouri, 1994). This is mainly as a result of existing industrial structures within peripheral regions, which have characteristics which are very different from those that can be observed in more advanced regions.

There are exceptions - for example, a recent report examining the peripheral regional economy of Wales showed that the innovative strength of the technology sector came from its dominant SME sector, rather than larger branch plants (CASS, 1995), although this, as Fontes (1995) suggests, may be due to the fact that firms of peripheral regions of more advanced countries, such as the UK, are already inserted into the context of an industrialised country.

One of the main reasons for the relative lack of development of the small firm technology sector within peripheral regions in Europe may be the lack of interaction with the local science and technology infrastructure (Fontes, 1995). As some commentators have noted, one of the major obstacles to the general development of a vibrant technological base of industrial firms is the lack of co-operation in the exchange and absorption of knowledge, especially with third-level institutions such as universities. This is despite increasing evidence of the importance of universities in developing the technological potential at a regional level.

UNIVERSITIES AND TECHNOLOGICAL DEVELOPMENT

The feedback within the innovation process, and the frequent and intermittent need for new scientific knowledge has led to an increasing focus on links between industry and academic institutions (Malecki, 1991), especially on the flows of knowledge between the two partners, which may lead to considerable diffusion of scientific and technical knowledge, particularly into the small firm sector. Indeed, universities and other higher educational institutions (HEIs) have, in recent years, become regarded as facilitators of growth for high technology firms. There are a number of reasons for this:

HEIs concentrate a large critical mass of scientifically sophisticated individuals who can generate new technologies which, in turn, can lead to innovative ideas (and technological knowledge) which can be channeled and diffused by new ventures. Various studies have recognised that a significant number of new technology-based businesses in both the USA and Western Europe had been established by scientists emerging from different types of academic-based organisations, such as non-profit research institutes, government research centres and universities (Klofsten, 1994; Giannisis et al., 1991; Roberts, 1991; Samsom and Gurdon, 1990). One example of this can be found in Linköping - one of the fastest growing regions of Sweden.

The region contains a strong high technology industrial environment, which includes the presence of Saab's Aircraft Division, Ericsson Radio and the Swedish Defense Research Establishment, and is at the forefront in the creation and development of new technology-based firms in Sweden. Academics from Linköping University have played a leading role in this. Of the 350 small technology-based spin-offs established in the region to date, approximately 70 of these have emerged directly from academic research activities at Linköping University (Klofsten and Jones-Evans, 1996), with a high number of the others using or developing university research findings as the basis for their products or services. Similarly, in the UK, a study of the 'Cambridge Phenomenon' found that nearly all of the 350 high technology businesses in the area had ultimately been generated from Cambridge University, especially the departments of physics, engineering and computing (Segal, 1985). The role of universities in creating these milieux of innovative firms within different regions has led to a proactive approach by universities, usually supported by regional or national government, in adopting a direct entrepreneurial role. This can range from the establishment of university-owned holding companies to promote fledgling academic entrepreneurs (Gibson and Smilor, 1991) to the development of specific centres of research and training which promote and assist the process of spin-offs of academic research into a network of industrial firms and business ventures (Klofsten and Jones-Evans, 1996).

As stated earlier, local and national governments view the high technology sector as a source of direct and indirect employment opportunities, and HEIs are seen as crucial to facilitating the growth of the local high technology sector. The development of a centre of academic excellence in a certain field can create or enhance a favourable public image and reputation. As a result, additional jobs can be created not only in a HEI, but also in the wider community surrounding the HEI, because of its enhanced economic and social status. For example, a recent study by Acs et al. (1995) of thirty seven American cities and six high technology groupings found a positive relationship between university research and increase in high technology employment of a city. Similarly, in East Anglia in the United Kingdom, where much of the emphasis has been on utilising the University of Cambridge as a catalyst in linking academic research, entrepreneurs and financial institutions to create a seed bed for new industry, there has been considerable growth in employment in high technology manufacturing, as well as other knowledge-based services activities such as R&D and computer services (Jones-Evans and Kirby, 1994).

Research-oriented universities are to the informational economy what coal mines were to the industrial economy, and are better suited to this role than private or public research centres (Castells and Hall, 1994). In an era of increased competition, industry has appreciated the need to increase its knowledge base, and in technology-intensive industries, links with HEIs can result in early access to scientific or technological knowledge. For example, academic research in the USA has become a major underpinning for industrial innovation in many

science-based industries. In information processing, pharmaceuticals and instruments, among others, more than 10 per cent of new products and/or processes in recent years could not have been developed (without substantial delay) in the absence of recent academic research (Mansfield, 1994).

The technical expertise available in HEIs can be used by existing local businesses to solve production process problems and to supplement their commercial advantage. This can particularly benefit small firms, who usually cannot afford the relevant technical expertise or equipment, especially as HEIs have computing, testing and analysis and library facilities which are an incentive for small firms to engage in a HEI-industry based relationship. As a result, local firms can become more technologically sophisticated, thus enhancing their competitive performance and, in some cases, their survival (Westhead and Storey, 1995).

HEIs are increasingly seen by high technology businesses as a crucial source of skilled graduates whom they can employ after graduation. Universities are also involved in training, in both requisite quantity and quality, of the labour force of scientists, engineers and technicians, which will provide the key ingredient for the growth of technologically advanced industrial centres. Indeed, the presence of a large research university with its thousands of potential highly educated technical personnel can be a factor in attracting firms to a particular region, as firms can only easily recruit their if they are already located in an advanced urban-industrial area. For all start-up technological centres, the ability to build a local labour market of good quality engineers and scientists is critical, and the university can play an important part in this through the supply of highly trained science and technology graduates. One example of this can be found in Austin, Texas, where the decision by a number of large technology-based businesses to locate in the region was due to the availability of high quality graduate students in the fields of computer science and electrical engineering (Gibson and Smilor, 1991). Moreover, students can also be used, through placements and assignments, by local small businesses to develop critical management and technical competencies which they could not otherwise afford (Kirby and Mullen, 1991).

Therefore, universities can play an important role in the development of indigenous technological development, which can range from being a source of well-trained manpower to a direct involvement in the imaginative matching of potential technologies to economic and social needs (McBrierty and O'Neill, 1991). However, within peripheral regions there is evidence that they are still particularly under-utilised, despite arguments that one of the chief impediments to economic development in these regions has been the failure to efficiently and effectively utilise the output of the education system (Kennedy *et al*, 1988).

UNIVERSITY-INDUSTRY LINKAGES WITHIN PERIPHERAL REGIONS

As Table 1 shows, there has been considerable growth in the expenditure on R&D by universities in peripheral regions, with Ireland (102.4%), Greece (187.1%), Portugal (250%) and Spain (234.3%) increasing their R&D expenditure in higher education by a higher amount than the European Community (74.6%) in the period 1985-1991.

An analysis of further data from the European Report on Science and Technology Indicators suggests that this increase in R&D spending, as well as a corresponding increase in R&D personnel in universities within peripheral regions, may be largely due to involvement in European Commission Research and Technological Development (RTD) international-based programmes (mainly with other universities and private/public research centres) rather than specific links with indigenous firms (European Commission, 1994, 255). In the three less developed countries of the European Union, namely Ireland, Portugal and Greece, RTD funding from the EC accounts for between 10% and 35% of total civil R&D spending.

Within many peripheral regions of the European Community, there is evidence that the structure of universities are 'endogamic' and therefore do not favour the establishment of relevant links with industry. This 'link gap' constitutes yet another impediment to the development of technology-based entrepreneurship (Castells and Hall, 1994). The reason for this relative lack of co-operation with indigenous small firms may, in part, be a symptom of the culture, especially within academia, that does not encourage the development of links with small-scale industry. As Louis *et al* (1989) suggest, universities are not traditionally viewed as leaders in entrepreneurship. In fact, they suggest that there is often a tendency to distinguish between the search for truth in science - which is considered a legitimate function of the university - and the search for invention - which is considered an inappropriate focus on ideas that have potential commercial or practical applicability. Indeed, it has been indicated that many academics are concerned that research collaboration with industry was against the central ethics of universities, which focused on fundamental research and the education of students, and that links with industry not only detracted from this but could, in some cases, restrict the free flow of information between academics and institutions (Charles and Howells, 1992).

Table 1: Research and Development Expenditure Performed by Higher Education (MECU - 1994 prices and exchange rates).

	1985	1986	1987	1988	1989	1990	1991	% Change
Belgium	333	353	386	382	608	-	696	109.0
Denmark	234	268	301	335	367	390	402	71.8
Germany	3008	3346	4025	4233	4457	4800	5734	90.6
Greece	31	29	34	40	81	86	89	187.1
France	2345	2505	2626	2739	3039	3313	3528	50.4

Ireland	41	50	52	52	62	72	83	102.4
Italy	1209	1371	1580	1756	1935	2317	2470	104.3
Netherlands	809	872	919	902	943	1061	1112	37.5
Portugal	34	41	50	60	83	104	119	250.0
Spain	248	268	307	402	531	671	829	234.3
UK	1987	1918	2072	2370	2509	2624	2882	45.0
EC	10276	11020	12352	13270	14615	-	17944	74.6

Source: European Commission (1994)

There is also evidence of a reluctance by small technology-based firms within peripheral regions to become involved in relationships with their local universities (Fontes and Coombs, 1994), although large companies regularly access universities for external sources of technological expertise (Chatterji and Manuel, 1993; Link and Rees, 1990). Whilst small firms were aware that university departments could provide advanced inputs in favourable conditions, it was generally considered that the knowledge generated by universities was less likely to be targeted to their needs. This is despite evidence from Mansfield (1994) that initiatives such as technical consultancy by an academic scientist for an industrial organisation may be one of the most effective forms of technology transfer. This general apathy - by universities and small firms alike - towards closer collaborative links, may be one of the greatest weaknesses of Europe's research and technology base, which has resulted in a comparatively limited capacity to convert scientific breakthroughs and technological achievements (from university research) into industrial and commercial success (European Commission, 1993).

The next section will consider some of the issues raised above in the context of a peripheral country in the European Commission, namely the Republic of Ireland.

THE REPUBLIC OF IRELAND

As in other peripheral countries in Europe, a shift in the Republic of Ireland's indigenous industry structure towards industries with long term international growth prospects (such as technology-based sectors) is long overdue. To date, remarkably little progress has been made in this direction over many years, with a general lack of technological capability within Irish industry, which has not been compensated for by a relatively weak indigenous sector. As Table 2 shows, the contribution of indigenous firms to technology-based sectors remains low, with overseas (mainly large multinational) plants providing the bulk of

exports and over 90% of high technology exports which originate in Ireland (Foley and Griffith, 1992). Such firms also account for more than 75% of high technology employment.

Table 2: Indicators of Scale of Irish Indigenous Manufacturing in 1990	
Indigenous share of manufacturing	
- employment	54.33
- exports	24.4
Indigenous share of employment in:	
- chemicals	23.45
- pharmaceuticals	13.98
- office and data processing equipment	7.19
- electrical engineering	22.66
Source: Foley and Griffith(1994)	

Table 3: Profiles of the Innovators and All Firms in the Republic of Ireland			
		Innovators	All Firms
Ownership:	Irish	66%	83%
	Foreign	34%	17%
Number of Employees:	10-49	52%	61%
	50-99	19%	21%
	100+	29%	19%
Sector:	High tech	30%	12%
	Medium tech	20%	22%
	Low tech	50%	66%
Source: Fitzgerald and Breathnach (1994)			

Similarly, the annual Irish innovation study (Fitzgerald and Breathnach, 1994) suggested that the typical profile of an innovating firm in Ireland was that of a large foreign-owned enterprise operating in the high technology sector with the contribution of small firms to innovation and employment in Ireland being relatively low (see Table 3). As O'Brien (1985) suggests, there are a number of reasons for this:

as Ireland is a late industrialising country, firms do not have a local base of sophisticated users, nor ready access to the range of suppliers and services available to firms in more advanced countries
Irish firms are generally late entrants to technology-based industries, and have to compete with existing sophisticated firms abroad
as a peripheral region of Europe, Ireland faces problems of access to information on technology, markets and competitors, as well as higher transport and selling costs
Ireland has a small home market which makes it difficult for new industries to grow and learn in an environment unprotected from abroad

This differs from the profiles of core countries such as the UK, where technology-based small firms have become increasingly important to future national industrial employment, especially within high technology industries.

TECHNOLOGY-BASED SMALL FIRMS IN IRELAND

The relatively poor performance of indigenous medium and large firms, coupled with the mixed performance of foreign owned firms, may serve to increase the Irish government's dependence on the indigenous small firm as a key element in its approach to economic development (Walsh and Anderson, 1994). As the Department of Industry and Commerce (1990) pointed out in the review of industrial performance, small firms have a role to play in establishing of a seedbed of industrial enterprises from which larger internationally trading enterprises can develop. However, most of the firms established in Ireland are small concerns which are very unlikely to expand into even medium sized enterprises selling overseas (O' Farrell and Crouchley, 1984). While the indigenous small firm sector in Ireland has increased its employment in recent years, this has been mainly as a result of the creation of new business (which remain small) rather than through the growth of those businesses after they had been established (Walsh and Anderson, 1995). Indeed, only 1% of firms established in Ireland since 1973 have grown to employ more than fifty employees (Department of Industry and Commerce, 1990) and, as the Task Force on Small Business (1994) points out, this is considerably less than in other countries, and there remains the need to develop sectors of Irish industry with substantial growth potential (Duijnhouwer, 1992; O'Farrell, 1986), especially within vibrant and entrepreneurial technology-based industries. This is no easy task, even within relatively successful sectors such as the Irish electronics industry, which has demonstrated considerable growth, especially in the areas of automation, communication technology and instrumentation (Orsenigo and O'Siuchru, 1991). Indeed, there is still some

doubt as to the electronics industry's future potential, with few firms being able to achieve penetration in their export markets that would enable them to reap the benefits of being leaders or near leaders in their respective niches (Government of Ireland, 1989).

Despite this, one of the few options open to Irish technology-based industries is to develop a base of indigenous firms with sufficient scale and resources to compete internationally from a peripheral location. However, unlike most advanced economies, where most small technology-based firms have emerged as spin-offs from large industrial organisations, mainly as a result of recessionary forces, fragmentation and flexible specialisation (Jones-Evans and Westhead, 1996), there is little evidence of a similar trend occurring in a peripheral economy such as Ireland, with no history of an indigenous high technology sector. As indicated earlier in Table 2, modern and growing high technology activities such as pharmaceuticals, chemicals, electrical engineering and instrument engineering, are dominated by foreign companies, with Irish firms to be found in more traditional sectors, such as food processing and the manufacture of metal articles. A recent study by Cogan (1995) suggests that there may be less than fifty small indigenous growth-oriented technology-based firms in the Republic of Ireland, which suggests an imperative need to develop this sector further. This small number of new technology-based firms within a peripheral region has also been reflected in a study of this type of organisation in Portugal (Fontes, 1995). Therefore, the question remains - how can the small technology-based firm sector within a peripheral region be aided to grow and develop?

As Rothwell (1994) indicates, the main strengths of small innovative firms are flexibility, dynamism and responsiveness, and this is borne out by the studies of such firms in Ireland (Cogan, 1995) and Portugal (Fontes, 1995). However, their main disadvantage and impediment to further growth is associated with a lack of access to financial and technological resources. The recent STIAC report (1995) recognised that Irish small technology-based firms are critically dependent on the emergence of new financing structures, especially in the development of indigenous seed and venture capital funds. This issue of financing for small technology-based firms is discussed in further detail by Kinsella and McBrierty (1994).

With regard to access to technological resources, there is little evidence of formal links between large and small technology-based firms in Ireland, except in a purely subcontracting capacity. This is not surprising, as the development of innovation within peripheral regions such as Ireland is characterised by an industrial structure in which there are relatively few large companies with sufficient resources to invest in Research and Development (R&D). Therefore, it is inevitable that other sources of technological expertise, such as the university sector, will play an increasingly pivotal role in a peripheral nation's knowledge base and research effort, including the training of scientists and technologists, service to industry, and industrial testing, as well as the creation and interpretation of knowledge for commercial exploitation.

UNIVERSITIES AND INDUSTRY IN IRELAND

The Irish Higher Education system is broadly divided between the university sector (which consists of six universities : University College Dublin, Trinity College Dublin, Dublin City University, University College Cork, University College Galway, University of Limerick) and the Regional Technical Colleges (RTCs), which also include the Dublin Institute of Technology (DIT). However, as table 4 shows the majority of research is actually carried out within the university sector, although RTCs are geared to work with industry on a more localised level.

Table 4: Research Output of the Higher Education Sector in Ireland (1993-4)

	No of research contracts	Annual Research Budget	Patents filed	Campus companies formed	Jobs created in campus companies	Research jobs sustained by contracts	Total jobs in research or campus companies
Univ.	2242	44.3M	58	146	1708	1689	3397
DIT	206	1.4M	2	1	30	120	415
RTCs	233	3.0M	15	31	145	147	292
Total	2681	48.7m	75	178	1883	1956	4104

Source: Kinsella and McBrierty (1994)

Gross expenditure on R&D by the higher education sector in Ireland has increased by 380% in the period 1982-1992, with over 73 million now being spent on R&D within the university sector (STIAC, 1995). Moreover, as the OECD (1987) have recognised, the research carried out in many Irish universities is often of a world-class standard, and the R&D capability of the Higher education sector has become a central element in the development of an indigenous technological industry. For example, the Faculty of Food Science and Technology at University College Cork is at the forefront of the development of scientific and technology facilities for the food industry and has maintained close links with industry for over seventy years (Orsenigo and O'Siuchru, 1991). It also houses the National Food Biotechnology Centre, which was established as a contract research facility to commercialise Irish biotechnology research. In addition, the establishment of the Plassey Technological Park on the campus of the University of Limerick during the early 1980s has actively promoted university-industry linkages in the Mid-West Region of Ireland (currently this is the only science park development in the Republic of Ireland).

During the last ten years, the Irish government has developed a number of specific policy initiatives such as the creation of industrial liaison offices and incubators for campus companies. This has been relatively successful, with 178 companies formed, creating over 1800 jobs in the process (see Table 4). However, many of these firms will remain small consultancy or 'lifestyle' firms, and will tend not to grow beyond a few employees, reflecting the trend found in other Irish industrial sectors. There have also been other national initiatives to promote academic-industry co-operation, including programmes in advanced technologies, applied research programmes, promotion of industrial liaison offices, and placement programmes (Frain, 1992), as well as high involvement in international research and technological development programmes.

Despite such initiatives, and the fact that Irish universities are as well organised as other international institutions in the provision of technology transfer to industry (McBrierty and O'Neill, 1991), the data still points towards a relative under-utilisation of universities as sources of knowledge and innovation, with very little evidence of this R&D being accessed directly by Irish industry. Universities are not solely to blame for this situation. As Table 5 demonstrates, indigenous firms are themselves reluctant to become involved with funding of research in academic institutions, with Irish businesses responsible for only 7% of all R&D spending in Ireland. Moreover, a recent survey for the STIAC report showed that less than a third of Irish R&D performing companies questioned were involved in a collaborative agreement with the higher education sector, which compares unfavourably with foreign-based firms, where over 40% had research links with HEIs (see Table 6).

This suggests that there are still considerable gaps in the development of university-industry relationships in Ireland, where the evidence indicates a piecemeal approach to developing closer university-industry relationships (although as Table 4 suggests, the university sector is having some success through patenting and the development of campus companies). This problem was highlighted by the recent STIAC (1995) report, which recognised that knowledge is the key to innovation-led development, and much of modern industry is now 'knowledge-based'. As such, the knowledge generating system in Irish colleges and universities must be strengthened and it must be ensured that it reaches areas where it will be most productive, especially the small firm sector, which seldom has in-house research resources, but can instead rely on university centres of excellence, such as biotechnology or polymer technology, for problem solving and advanced level help with innovation.

Table 5: Expenditure on R&D in the Higher Education Sector, IR£'000s, 1992

Source	Total	% of Total
HEA Indirect Funds	28,960	40%

Direct Government sources	**19,797**	**27%**
European Commission	**12,580**	**17%**
Irish Business Sector	**5,351**	**7%**
Other funds	**3,175**	**4%**
Foreign sources	**2,004**	**3%**
Irish Private Funds	**1,101**	**2%**
Total	**72,968**	**100%**
		Source: STIAC (1995)

Table 6: Number of R&D Performing companies involved in R&D Consortia with the Higher Education Sector in Ireland, 1991

	Yes	No	No Response	Total
Irish	**82**	**272**	**125**	**479**
Foreign	**45**	**106**	**41**	**192**
TOTAL	**127**	**378**	**166**	**671**
% TOTAL	**18.9%**	**56.3%**	**24.8**	
				Source: STIAC (1995)

However, one of the main obstacles to increased co-operation between indigenous industry and the higher education sector in Ireland may stem from the general lack of enterprise culture at all levels of industry and society within Ireland, as highlighted in various reports (World Economic Forum/IMD, 1994; OECD, 1987). This apathy towards enterprise may be especially the case within the higher education sector, where there is no tradition of an enterprise culture within universities in Ireland. The STIAC report has suggested a number of measures at university level which may begin to address this problem. These include:

the adoption of a new research charter by universities which promulgates, for the benefit of all research staff, a proactive attitude towards research activities and, in particular, towards interaction with commercial users of research expertise, and which deals with policies relating to the career prospects of researchers involved in commercial contract research

a campaign to create a greater awareness and understanding throughout the knowledge base of the concept of intellectual property, especially between the knowledge producer and the knowledge user. indeed, a model should be established between representative bodies of both industry and third level institutions to deal with this matter
a formal mechanism to ensure collaboration and co-ordination between the main participants in the STI skills system
all state sector and third level institutions involved in research or technological development should devote sufficient resources to a specific function for technology transfer, aimed at identifying those firms which can benefit from currently available technology
a third level/industry understanding, setting out the rights and obligations of industry and institutions in relation to research contracts, should be formulated in order to improve the prospects for increased research collaboration and technology transfer

These proposed policy changes reflect the concerns of industry in other peripheral regions (Fontes and Coombs, 1994), as discussed earlier, as well as the policies of entrepreneurial universities in more advanced economies where factors such as the positive attitude of both administrators and department heads towards non-traditional academic activities, and the development of entrepreneurship courses specifically designed for university scientists and researchers have positively aided the links between university and academia (Klofsten and Jones-Evans, 1996; Albert et al, 1991). When such policies are in operation, it has been seen to be beneficial to both the university and the technology-based venture (Samsom and Gurdon, 1990). It remains to be seen whether Irish universities can develop the right environment in which internal academic entrepreneurship can thrive.

CONCLUSION

The future competitiveness of peripheral economies in Europe, such as those of Ireland, Portugal and Greece depends, to a large extent, on the development of technologically innovative sectors. With the absence of strong indigenous medium and large firms, policy-makers have increasingly begun to turn their attention towards small technology-based firms, which have been shown to have made significant contributions to employment, innovation and the competitiveness of technology-intensive sectors within the more advanced economies. However, evidence indicates that there are currently relatively few small technology-based firms in the peripheral regions of Europe, and there is a need for various policy initiatives to

stimulate their formation and development. As Fontes (1995) suggests, these must concentrate on addressing critical elements in the creation of small technology-based firms, such as the emergence of technological opportunities, the people with the capacity to identify them, and market opportunities which permit them to turn into successful businesses. Any policy intervention, to be effective, must address the root of the problems identified in these areas, namely the supply and demand for technology. With the absence of industrial R&D facilities within many small economies, universities are one of the few sources of technical knowledge and expertise available to industry to small technology-based firms, although evidence from one peripheral economy - the Republic of Ireland - suggests that many firms choose not to form close links with academia. In addition, there is a general apathy, on the part of universities, to form close links with industry, although this may be associated with the general lack of an enterprise culture within the Irish economy. This is despite recognition by the EU Commission White Paper (1993) that one of the major problems facing the growth and competitiveness of European industry, particularly within peripheral regions, is the ability to translate R&D capability within the academic sector into commercial applications.

Future research should examine the mechanisms which exist for transferring technology between university departments and industry. Indeed, as Geisler and Furino (1993) state, there is an urgent need to explore selected dimensions of university-industry relationships in detail, such as technology transfer and knowledge acquisitions, especially their impact on participating organisations. The evidence presented in this paper suggests that this need is imperative within peripheral regions such as Ireland.

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THE INNOVATION AND INTERNATIONALISATION OF SMALL BUSINESSES: APPLYING THE INNOVATION CONCEPT IN AN EXPORT CONTEXT

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ABSTRACT

This study is based on the assertion that the innovation perspective in export research is losing its applicability. This is due to the radical changes in small business internationalisation: the period of time from establishing a firm to beginning to export is shortening. The innovation perspective is the only approach to internationalisation that addresses the timing of export adoption. To establish grounds for this assertion, an extensive literature review was performed on the innovation concept, together with an empirical analysis among entrepreneurs - in general and in an export context. The focus in this study lies not on the process but rather on the outcome - export adoption as an innovation. The aim was to discover the attributes related to the innovation concept and the prerequisites for its application in an export context. Based on this study, newness was perceivable as a definite prerequisite for application of the innovation concept - in any context. However, the newness requirement is not necessarily fulfilled in today's young exporting firms. This leads to the idea that changes in firms' internationalisation may affect the theoretical basis from which to study the phenomenon, i.e. firms' internationalisation.

INTRODUCTION

Internationalisation has most often been defined as a time-related process of increasing international involvement (Johanson & Vahlne, 1978; Czinkota, 1982; Strandskov, 1986). A firm's initial involvement in international marketing is typically in the form of exporting (Souza et al., 1983; Cavusgil, 1990). Perhaps the most important point is that such involvement is a gradual process taking place in incremental stages and over a relatively long period (Strandskov, 1986; Miesenbock, 1988; Welch & Luostarinen, 1988; Cavusgil, 1990). The process of internationalisation is described by several models and theories. It can be seen as a decision-making process, which may be looked at from different viewpoints. These

different viewpoints classify the models that have been developed to describe the export decision process. One way to approach the subject is the innovation approach.

The innovation perspective in an export context is relatively new. The first study applying this perspective was made in 1968 by Simmonds and Smith; it was almost ten years before the innovation perspective emerged again in the research of international marketing. Until recently it has not been popular - there are only a few export studies applying the innovation perspective, which would tend to indicate that no fixed, generally approved conceptual connection exists between exporting and innovation. Recent export studies have simply based their ideas on previous studies or general ideas of innovation without analysing the prerequisites for application of the innovation concept in an export context.

The 1980s and 90s have been characterised by the rapid internationalisation of business: exports which have risen quite steadily and the number of exporters is clearly increasing. At the same time, the growing proportion of Finnish export is attributable to small and medium-sized enterprises (Hovi & Hurmerinta-Peltomäki, 1993). The firms start their outward operations earlier and earlier, i.e. the gap from the establishment of a business to its starting export activity (=export adoption lag) is shortened.

The innovation perspective is the only approach to internationalisation that addresses the timing of export adoption (see Andersen, 1993). It is our assertion that when the internationalisation of small businesses is evidently changing in nature, i.e. speeding up, it may have some influence on the applicability of the innovation perspective in an export context. Application of the concept requires agreement of the different attributes connected with an innovation as well as evaluation of these attributes in different contexts, in this case exporting.

The high rate and value of technological innovations in the world's economy have made the study of technological innovations or more precisely, product and process development, a popular research topic. However, there are also other contexts in which the innovation concept has been applied. These have often attracted less attention. One of these areas of application is exporting.

Innovation is not a well-defined concept (Zairi, 1994). This means that the conceptual field of innovation is rather confusing. No agreement has been reached on which attributes the innovation should have and whether it should rather be seen as a revolutionary or incremental concept (see Rothwell & Zegweld, 1982). This gives the impression that the innovation concept has deliberately been left as a loose concept, thereby enabling its extensive use. This, however, leads to number of problems:

The loose interpretation of the innovation concept and its derivatives, like innovativeness and innovator, may lead to its misuse. The basic (primary) attributes of the innovation may be overlooked and displaced with subjective (secondary) attributes. However, we should know the minimum prerequisites for use of the concept.

Focusing on one application area of an innovation perspective alone may hinder the development of the basic concept itself, as well its applicability. Extending the research field is supported by Rogers (1983), who suggested that the challenge for future innovation research is to seek objectives other than those of the past and to dig deeper.

Innovation describes the object it is related to, i.e. the innovation concept and the object should match each other. Downs and Mohr (1976) suggest that innovations may be classified according to their characteristics. These characteristics may be based on primary attributes, when an innovation can be confidently classified without reference to a specified organisation or any other unit; or on secondary attributes, when the classification of the innovation depends on the organisation that is contemplating its adoption. In this latter case it is the perceived characteristics of an innovation which matter.

The purpose of this paper is threefold:

to find the different application areas of innovation (innovation contexts), and

to characterise the different attributes related to the innovation concept, and

to analyse the relationship between the innovation concept and export, both theoretically and empirically.

METHODOLOGY

This is a conceptual study. The purpose of a conceptual study is to find different perceptions of the same concept and to speculate thereon. However, by analysing "old" concepts, the researcher proceeds quite mechanically in her or his research. The conceptual analysis also presupposes creativeness. This, especially when the context itself is changing, i.e. the export adoption lag is shortening, may arise from small businesses themselves (see Näsi, 1980). The research consists of two parts: a literature review and an empirical analysis. This study might actually be seen as a dialogue between previous literature and entrepreneurial understanding, where the literature represents the academic interpretation of the concept and

the entrepreneurs represent understanding of the factual reality. This might be perceived as a rather ideal way to develop understanding and the link between theory and empiricism.

The literature review is based on different innovation studies; the aim is to find and analyse different innovation contexts and attributes related to them, in order to fruitfully study export adoption as an innovation (see Hyvärinen, 1995). In addition to previous studies, an empirical part based on entrepreneurs' interpretations of the innovation concept is also included. The purpose of the research determines the research method. In this situation case study research is particularly appropriate; the only way to add some depth to the conceptual meaning of innovation is a case-analysis (see Johannisson, 1991). It can also impute a new perspective and freshness. Inductive empirical research may be more useful than simply applying deductive reasoning from theory (see Bygrave, 1989), which often prevents making new discoveries and finding slight differences. This is especially so, when the focus is on a rather new application area of innovation - export innovation.

The empirical analysis of the study consists of case interviews in six small businesses (see Appendix for background information on the firms). They are industrial, small exporters with direct contacts abroad that started to export between 1987 and 1990 with an adoption lag of nil to seven years. The firms each employed no less than 3 and no more than 20 people. The entrepreneurs have been involved in their firms from the outset. The case-selection was not restricted to any particular industrial field.

DATA COLLECTION AND ANALYSIS

The empirical part of this study comprised case-interviews made in 1994. The interview was based on semi-structured questions directed to the owner-managers of the firms. They were asked to give their views on the content of the concept of innovation and on whether exporting or export adoption could be seen as an innovation, and also to state reasons for their opinions. The interview questions were as follow:

What is an innovation?

What attributes you would connect with innovation?

Do you think of exporting/export adoption as an innovation?

Give reasons for your opinion.

Was export adoption an innovation for your firm?

Give reasons for your opinion.

The conversations were recorded on tape. First, the tape was transcribed to text based on the actual mode of speaking. Different text styles indicated pauses, hesitation, the absoluteness of the answer, etc. Secondly, the text was modified stylistically and irrelevant snatches of the conversation were expurgated. Finally the text was compared to theoretical research problems, and was written out in compact form. Analysing qualitative data is based on interpretations of meanings (Tynjälä, 1991). Table analysis was used as a tool in analysing the case firms; they were compared with each other in tabular form. This indicates that the data has been systematically analysed rather than relying on the intuitive interpretations of the researcher alone. Some quotations, which described the substance of the point under research well, enlivened or justified interpretations, were kept in their original form in the final text. The aim was to find patterns of similarities between cases and relate the findings to the theoretical understanding of the concept.

During the interview process, the entrepreneur was given space to answer in her or his own way. The mere knowledge that one is under study might, however, affect the results and thereby internal validity. During the interviews, some entrepreneurs evidently had a need to think about the questions from the researcher's point of view as highly theoretical problems. The researcher had to emphasize the importance of the entrepreneurs' own perceptions.

The case method always brings up the question of generalisability, i.e. the application of findings (see e.g. Gummesson, 1991). In this kind of explorative study, there are a great many subjective elements, which make any generalisation very difficult. The focus in this study lies, however, on more abstract common characteristics of the cases (see Huberman & Miles, 1994) that evidently expand our opportunities for generalising the results. Since the primary goal was to apply a more general theoretical understanding, statistical generalisation of the findings is not required (Calder et al., 1981).

EXPORT AND THE INNOVATION CONCEPT: LITERATURE REVIEW

We may assume that some attributes are common to all innovations - no matter what the context or perspective (theory or empiricism). This means that some prerequisites for the use of the innovation concept are supposed to exist, which have to be taken into account when the studies are based on the innovation perspective. Variation in interpretations of the same concept are quite usual where covenanted concepts are concerned, but sometimes differences are also found among concepts on which rough unanimity has prevailed (Näsi, 1980). The different contexts of innovation and attributes related to them are then analysed. Special emphasis is given to export innovation.

Application of the innovation perspective requires closer examination of the innovation concept, because this approach is still a fairly new application area in an export context. Innovation is a widely used concept and the term is variously defined to reflect the particular requirements and characteristics of a specific study.

The differentiation of the innovation concept was first suggested by Schumpeter in 1934. He saw innovation as a "new combination" of existing materials. The concept covered five cases: the introduction of a new product, the introduction of a new method of production, the opening of a new market, the conquest of a new source of supply and executing a new organisation (Figure 1). Schumpeter's initial concept has obviously influenced the views of researchers recently, too (Harrison & Hart, 1987; Dosi, 1990; Sundbo, 1991). For instance, Thom (1990) classifies innovations into process, social and product innovations, of which a social innovation relates to an administrative innovation. Drucker (1974) classifies innovations into managerial, social and product innovations. By a social innovation, Drucker means an innovation in the marketplace and consumer behaviour and values referring to solving a social problem.

Figure 1: The Different Approaches of the Innovation Concept

The usual approach views an innovation in terms of technological development, as a new product or a new production process (Cannon, 1985). There are studies which don't differentiate innovation from invention, i.e. the application of technological advances in products and processes from the discovery of a totally new product or process. In technological innovations, the traditional measure of the rate of innovation has been research

and development (R&D) expenditure per employee related to the number of patents or innovations for new products or production process per employee (Small and Medium-sized..., 1993).

Another type of innovation is an administrative development where the organisation takes on a new form (Van de Ven, 1986; Dosi, 1990; Sundbo, 1991) or human resource management is improved (Thom, 1990). Drucker (1974) uses the term managerial innovation, with which he means innovation in the various skills and activities needed to make the products and services and bring them to the market.

In addition, there is also a marketing innovation, which is often closely related to technological development (Rothwell, 1994; Johne, 1994). Porter (1990) perceives that an innovation is a new way of doing things, termed an invention, that is commercialised and thereby demands marketing activities. Majaro (1985) extended the content of a marketing innovation, suggesting that innovation can take place in any area in which managerial decisions in marketing have to be taken: product, pricing, distribution and communication.

The link between technological, administrative and marketing/market innovations is crucial. For instance, Collier (1974) has suggested that changes in product, technology and market always require appropriate organisational change. According to Rothwell and Zegweld (1982), the transformation of a new idea or technological invention into a marketable product or process (this is called as an innovation process), requires the existence of some sort of organizational framework within which this transformation might take place.

In Table 1, different definitions of innovation are reviewed, relating them to different approaches to innovation wherever the connection was clearly visible.

Table 1: Definitions of Innovation

Schumpeter, 1939	**Innovation is a function consisting of creative thinking and action.**
Rogers & Shoemaker, 1971	**An innovation is an idea, practice, or object perceived as new by an individual. It matters little, so far as human behaviour is concerned, whether or not an idea is "objectively" new as measured by the lapse of time since its first use or discovery. It is the perceived or subjective newness of the idea for the individual that determines his reaction to it. If the idea seems new to the individual, it is an innovation.**
Rothwell & Zegweld, 1982	**Innovation involves both technical novelty and utility. Every innovation must therefore rest on a new combination of a technical feasibility and an economic demand (technological innovation).**
Damanpour & Evan, 1984	**Innovations are considered to be responses to environmental change or means of bringing about change in an organization (administrative innovation).**

Drucker, 1985	**Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service.**
Majaro, 1985	**Creativity is the thinking process which helps us to generate ideas. Innovation is the practical application of such ideas towards performing a task in a better and/or cheaper way.**
Van de Ven, 1986	**The development and implementation of new ideas by people who over time engage in transactions with others within an institutional context (technological and administrative innovations).**
Lancaster & Taylor, 1988	**Innovation can relate to any idea, practice, or material artifact which is regarded as novel by members of a social system (technological innovation).**
Damanpour et al., 1989	**Innovation is defined as the adoption of an idea of behaviour - whether pertaining to a device, system, process, policy, programme, product, or service - that is new to the adopting organization (technological and administrative innovations).**
Dosi, 1990	**Innovation concerns processes of learning and discovery about new products, new product processes and new forms of economic organisation (technological and administrative innovations).**
Brown, 1991	**Marketing innovation depends on a process whereby people gradually become favourably disposed to a new idea.**
Sundbo, 1991	**Innovation is a combination of (1) the presence of the ideas, (2) that innovations are allowed or encouraged by the organizational structure, and (3) the mobilizing of the innovative drive in one or more individuals.**
Hyvärinen, 1992	**Innovation is understood as doing things differently, not necessarily in an objectively new way. Concerning internationalization this means the positive deviation from the most frequent way to internationalize in the industry, group or market the enterprise is operating in (marketing innovation).**
Venkatraman et al., 1994	**Innovation involves significant changes in the routines used by the organization to deal with its tasks of internal arrangements and external alignments (administrative innovation).**
Autio, 1995	**A technological innovation is a commercially successful, essentially new or an essential improvement of a system, process, method, product, or service, which has been widely accepted into use.**

The time aspect is clearly included in the definitions of an innovation concept in Table 1. This becomes apparent from different terms indicating time: change and new. At the same time, these terms refer to different issues that must be taken into account when studying the research phenomenon and applying an innovation perspective: process and newness.

Finding differences between technological, administrative and marketing innovations was not, however, easy: *for technological innovations, novelty and utility were emphasized, of which the latter attribute reflects that a product innovation has to rest on market demand; in administrative innovations, change and newness were emphasized, while marketing innovations included attributes like newness (perceived newness) and positive deviation from other firms. Newness and utility seem to be present the most often.*

At an abstract level there are two main features common to all definitions of innovation, but whose meanings vary according to the potential adopter. Both may be included in secondary attributes. An innovation always relates to something totally new or to a certain degree of change. This leads to the idea that an innovation may be seen as minor or routine by some organisations but as major or radical by others. Buttner and Gryskiewicz (1993) have suggested that differences in innovation adoption might be especially influenced by the different perceptions or interpretations of "newness".

Innovation is also often viewed as a good thing with some utility. The new idea must thereby be "useful" i.e. profitable, constructive or problem-solving. New ideas that are not perceived as useful are not normally called innovations; they are usually called mistakes (Van de Ven, 1986, see Drucker, 1974 and Jensen, 1988). Utility, with reference to technological innovations, refers to utility especially from a consumer perspective; utility in marketing innovations, i.e. positive deviation from other firms, refers to competitive advantage over other firms i.e. utility from a firm perspective.

EXPORT AND INNOVATION ATTRIBUTES

Many studies of the adoption of innovations have been done in other than an export context, but there is every reason to suspect that many of those findings could also be applied to export behaviour (Thomas & Araujo, 1985). Until now, the connection between exporting and innovation has most often been related to the export of a technological innovation. Innovative capacity, i.e., research productivity, has been seen as a key determinant of a firm's competitive standing in international markets (Ballance et al., 1992). Specifically, it has been argued that the adoption of an export-oriented strategy is an innovation in its own right, and that entry into the export market is as much an innovation as the adoption of a new production process (see Lee & Brasch, 1978; Thomas & Araujo, 1985).

There are two senses in which the term innovation can be used: to describe an object, idea or practice or to describe a process (Lancaster & Taylor, 1988, see Pfirrmann, 1994). In

other words, it may be seen both as a type of behaviour as well as a result of such behaviour. It appears that different criteria may be seen for an adoption point, i.e., no consensus about the definition of "adoption of exporting" could be found in previous expert studies. This gives an impression that there may be several adoption stages along the adoption process. The crucial issue would be to find out the generally accepted criteria for export adoption. We may approach export adoption as a marketing innovation (export innovation) or the export adoption process as an innovation adoption process or both; export adoption is seen here as a result of the export adoption process (Figure 2).

Figure 2: Application Area of the Innovation Perspective

Export adoption process	⇨	**Export adoption**
= adoption process of a	⇨	**= a marketing**
marketing innovation	⇨	**innovation**
(Change in the Process)	⇨	**(Newness and Utility)**

The term process is used here as a sequence of events that describes how things change over time. For instance, a decision-making process is typically viewed as a sequence of separable stages (Van de Ven, 1992). Thus the process indicates change, while export adoption reflects the newness and utility aspect of adoption. At a general level, export innovation is defined as the adoption of the idea of export behaviour that is new to the adopting unit. Export adoption occurs when an individual or other relevant adoption unit is persuaded to commit itself to exporting (see Lim et al., 1991). Commitment may include either resource or decisional involvement or both (Collins Cobuild Dictionary, 1987).

There are only a few studies on the export adoption process (Bilkey & Tesar, 1977; Cavusgil, 1990; Reid, 1981; Lim et al., 1991; also Czinkota, 1982 with an implicit link with the innovation perspective), with no analysis of innovation attributes. Further, there is an ambiguous term innovativeness that is not included in discussions of an innovation concept itself, but which might be seen as a construct relevant to shedding more light on the research subject. As regards export studies under the label innovativeness (Simmonds & Smith, 1968; Lee & Brasch, 1978; Mäkinen, 1989; Hyvärinen, 1992; Samiee et al., 1993), the main focus is on behavioral differences and not on the innovative attributes of export adoption.

Applying an innovation perspective in an export context involves finding the innovative dimensions of exporting, i.e. the export adoption has to fulfill the characteristics demanded of an innovation. Until today, studies on export innovations have not evaluated these characteristics; *no analysis of attributes for export innovation was found.*

EXPORT AND THE INNOVATION CONCEPT: AN ENTREPRENEUR'S VIEW

In addition to the literature review, the innovation concept was analysed also from the entrepreneurs' point of view. They were asked to give their views on the content of the concept of innovation and on whether exporting or export adoption could be seen as an innovation, and also to state reasons for their opinions. The background information on the firms is presented in the Appendix.

Firm A:

When asking about an innovation, product protection came strongly to the mind of the entrepreneur, for a start. This refers once again to product innovation. The entrepreneur initially took the traditional technological innovation approach as his view. But very soon, maybe even unnoticed by him, he connected a marketing aspect with the technological innovation, i.e. a marketing innovation. The entrepreneur followed the original differentiation of the innovation concept by Schumpeter surprisingly well, emphasizing the marketing innovation:

> **At first we *went for product development,* then we *created the markets* for these products and we are now in the situation where the *distribution system should be built.***

Here we see not only the differentiation of the concept but also the chronological order of these different approaches to an innovation. Small businesses are extremely product-oriented, which evidently came through here too.

New creation and building were stressed by the entrepreneur as attributes of the innovation concept. When asked to consider exporting as an innovation, the manager could see it as such for some firms - but not for him or his company. Extensive experience of exporting gathered in his previous employment decreased the innovative nature of the export start in his own firm. Actually, the manager had always thought that

Business is made globally, not only in Finland. I wonder about firms that don't export. It's nothing special, but naturally those *people* who don't have *previous export experience* may face quite an *obstacle* in starting to export.

Firm B:

The entrepreneur interpreted innovation at first as a new technological application that would have value for somebody. The entrepreneur emphasized the traditional view of technological innovation.

Based on the idea I have of its meaning, that is something we are not short of. We have more innovation than anybody else could have.

This comment might be seen to hit upon the right thing, since the firm had a patent on its products. However, the manager also linked the innovation concept with exporting. "Yes, exporting is or at least should be an innovation." The entrepreneur used the term marketing innovation. Export is perceived as a marketing innovation inasmuch as the firm is capable of seeing the real needs of customers in the market; finding out a customer's needs is the crucial part of a marketing innovation. Where a need is perceived, the entrepreneur should find a key to solve the customer's problem through product development. A technological innovation and a marketing innovation are considered to interact continuously with each other. The connection between the innovation concept and export seemed fairly clear.

However, regarding his own firm, this kind of perspective turned out to be rather difficult. The firm's own determination of the innovation concept didn't match with the idea of export adoption as the entrepreneur saw it. According to the definition of the entrepreneur himself, every single export order could be qualified as an export innovation. However, since the entrepreneur couldn't qualify his firm as an export firm, he questioned the whole idea of export adoption. Export could not be perceived as an innovation, because the firm does not, based on the entrepreneur's opinion, fulfill the stated criteria for an export firm. The owner-manager doesn't see his firm as an export firm, but more like a pioneer in its own industry. According to the owner-manager, the firm doesn't fulfill the stated criteria for an export firm. The manager argues his point as follows: (a) there has been no negotiation, exports have rather been based on acquaintanceships; (b) exports haven't increased at the same rate as turnover and have remained quite small (about FIM 0.8 million in 1993), (c) no production line plant has been exported, (d) products and applications based on the firm's new technology have not made their breakthrough on the market yet, (e) exporting is not planned, (f) exports occur rather sporadically, (g) the customer base is too small and (h) more resources are needed. At

this stage it is a question of extent of export involvement, which in this case seems to become a prerequisite for an export adoption.

Firm C:

The entrepreneur perceived an innovation as "inventing something new", thereby connecting the newness aspect with the innovation concept directly. However, the entrepreneur interpreted innovation as an invention rather than as an incremental development. Also "enthusiasm" was seen as an essential attribute of the innovation concept when something new is to be created. Without mentioning it, the manager was evidently thinking of technological innovation.

Export was perceived as an innovation. Concerning his own firm, he saw export as an innovation where the export agent found new uses for their old product. The entrepreneur's most interesting comment here was: "I think export is still an innovation, even today." With this statement the entrepreneur takes a clear stand on innovation being an organisation-related and not only economy-related innovation. As the interview proceeded, export was able to be perceived more and more clearly as an innovation. Bringing the needs of customers together with the firm's product requires a sort of ability to "get the message":

> **Export *is* an innovation, for goodness sake! Marketing is a little bit different and so is people's way of thinking: the needs of these people are different as well as the way of selling. It calls for the ability to get the message. It certainly is an innovation.**

However, the manager did not perceive export adoption as an innovation for firm C. He explained this by saying that a coincidence cannot be characterised as an innovation. The firm made its first export delivery because it was approached by a potential client from abroad: "You can't say: Sorry, it doesn't work now." This leads to the idea that an innovation implies the firm's own, free initiative:

> **Well, I don't know. It was a coincidence...so was there any innovation?**

Firm D:

Innovation was perceived as a "thing" which differs from other products and which has a world-wide market. Self-evidently, the entrepreneur linked the innovation concept to product innovation, i.e. to technological innovation. By highlighting the difference from other

products he referred to the newness dimension of an innovation. Further, the marketing aspect was also implied, because the product has to have demand.

However, the entrepreneur could not perceive of export as an innovation. There was a clear hesitation: connecting the innovation concept with exporting was probably a totally new idea for the entrepreneur. The entrepreneur gave the following as a reason for his opinion: "It's normal that a firm exports or imports. When you are in this business, it is a must". The entrepreneur felt absolutely certain that without alternatives there is no innovation. That is, that if something has to be done, it cannot be an innovation.

The entrepreneur perceived his firm to be innovative in the sense of product development; the firm had invented new uses for its products. But with strict reference to exporting or export adoption, the comparison with the innovation concept was not perceived; not in general and not in his firm.

Firm E:

Innovation is, for example, inventing a manufacturing method that can be applied in another related firm, too. Innovation has dimensions like intensiveness and intensity of planning, a sort of "creative madness" not withstanding that the product has to have a use. This entrepreneur links the innovation discussion both with product innovation and process innovation, thereby strongly emphasizing the technological dimensions of the innovation concept. However, by stressing the usability of the product, a slight reference is found to the marketing dimension.

The entrepreneur was strongly in agreement with the view of exporting as an innovation. Exporting was seen to have innovative features because an exporter has to know how to operate in different cultures: "when in another country, do as they do".

Export initiation in one's own firm was characterised as "a rush to something totally unknown". Hesitation appeared, however, when the entrepreneur stopped to think that marketing knowledge acquired in home markets could also in fact be applied in foreign markets. This raises a question about the degree of innovation, i.e. incrementality of an innovation. Innovation might be seen as a rather relative concept.

Firm F:

Innovation is seen as a highly multidimensional and very large concept. Therefore, to be able to define the concept more accurately, the entrepreneur requested the context to which

the innovation relates. In general, the entrepreneur linked ideation, freshness, and the hectic rhythm of life that is bubbling ideas and development to the concept.

Exporting is seen as an innovation. Customer relationships act like an idea generator. This includes export relationships as well, from which new ideas could be drawn. This will further be reflected in product development. The entrepreneur saw the connection between a marketing innovation and a product innovation clearly. Exporting also requires different modes of operation than does acting in domestic markets. The entrepreneur saw export adoption as an innovation for firm F, due to its meaning new markets.

CROSS-CASE ANALYSIS

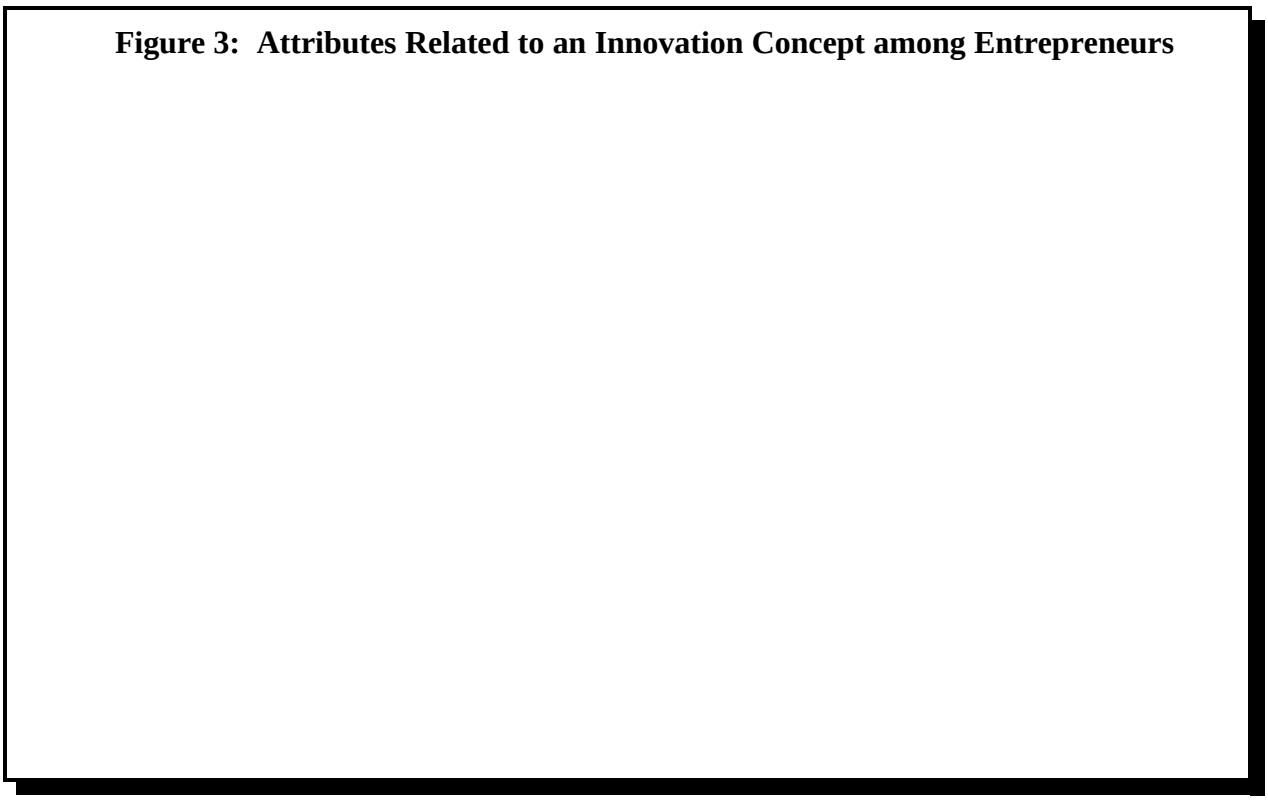
When talking about an innovation, we may well have a variety of views of the concept in our minds. The view may e.g. be a very narrow one, which further restricts the understanding of the huge applicability of the concept as a theoretical tool for dealing with empirical subjects.

The owner-managers were asked to give their views on the innovation concept. With one exception, the managers approached the innovation concept from a technological point of view, which included both process as well as product innovations. However, in many cases the marketing aspect was strongly there as well, which only confirms the impression of a tight link and interaction between different types of innovation. In contradiction with the literature review, the entrepreneurial approach to innovation is still a very narrow but traditional one.

The owner-managers also gave some thought to the attributes related to the innovation concept; due to the emphasis on process and product innovations, these attributes naturally concern technological innovation in particular (Figure 3).

These attributes give the impression that the entrepreneurs see the innovation both as a process as well as an outcome. This indicates that there is a creative phase which results in something new that also has to have some use for somebody. Newness and utility (or usability) are evidently outcome-related attributes, a fact which also appeared in the literature review, especially in relation to technological innovations. Do these aspects also appear in the export context?

Figure 3: Attributes Related to an Innovation Concept among Entrepreneurs



The owner-managers were asked to think whether exporting as such could be perceived as an innovation. Linking these concepts seemed to be quite natural, although some hesitation also appeared; this hesitation might be understood to be due to the unusual innovation context. Although firm D could not perceive exporting as an innovation; the owner-manager reported that "it is normal that a firm exports" - so is there any innovation? Conversely, if it were the exception to export, exporting could be seen as an innovation (Figures 4 and 5 are analysed simultaneously in this chapter). Firm D started exporting right after its establishment i.e. with a zero adoption lag.

It seemed quite easy to generally interpret exporting as an innovation. The owner-managers of firms B, C, E and F perceived that export innovation is tightly linked to technological innovation. Exporting was seen rather as a tool for having a contact base with customers and their needs, that further creates new ideas for product development. The innovative nature of exporting rises from this connection between technological innovation and export (see Ballance et al., 1992); the newness aspect is emphasized, but in product development, not in export. Although firm A connected the newness aspect directly with export; exporting could be perceived as new for those, who have not experienced it before, i.e.

"It is new for a firm or for a manager". With this the owner-manager refers to entirely new behavior, not only on an organisational but also on an individual level.

Figure 4: the Owner-managers' View of Exporting and Export Adoption as Innovations

However, when the firm had to consider the innovative nature of exporting or export adoption, the perceptions of export innovation and its attributes differed from those mentioned in the technological approach. Export adoption looked different to each firm. Only firms E and F saw export adoption as an innovation for their companies. One common reason appeared: unfamiliarity with and the newness of exporting. This might be considered understandable, since these owner-managers had had no contact with exporting or foreign issues in general before establishing their own firms; there was no foreign experience which refers to entirely new behavior - both on an organisational and on an individual level. These firms signify a typical craftsman (see Appendix), who has to begin everything from the very beginning. The export adoption lag in these firms lasted from three to seven years.

Figure 5: Owner-Manager Perceptions of Exporting & Export Adoption as Innovations

Firms A, B, C and D didn't consider export adoption in one's firm to fulfill any innovative requirements, which they understood as follows: newness (either at a personal or company level) from firm A; deeper export involvement (this might be called the extent of exports) from firm B; one's own initiative from firm C; and free choice to start exporting according to firm D. The lack of newness could be understood where the owner-manager had either previous experience of exporting and/or some other contact base with foreigners and foreign culture. Deeper export involvement was mentioned by the owner-manager of firm B as a prerequisite for innovation. He saw that there is no use thinking of the innovative nature

of export adoption, if he does not even regard his firm as an export firm. He stated that a firm has to reach the stage of being an established exporter with regular exports before any adoption of exporting can even occur. The question is one of the extent of export adoption i.e. the timing of adoption.

Export adoption as an innovation was perceived to require one's own initiative by firm C; coincidence was not seen as an innovation. This is supported by Samiee et al. (1993), according to whom the firm is an export innovator if the exporting idea is largely generated and executed internally. Firm D especially stressed the free choice of export adoption.

Figure 6: Attributes Related to the Innovation Concept and Export Innovation

SYNTHESIS

Owner-managers are willing to see innovation rather as a technological process or product against which all the attributes should be evaluated. Transferring the idea of the innovation concept to exporting still maintained the link between technological innovation and exporting, i.e. marketing innovation. Exporting could be seen as an innovation mostly in the way it gives new ideas for product development (Figure 6).

Export adoption requires, however, more specific attributes. This may reflect the fact that export adoption is a unique innovation and that is why the general attributes, newness and utility, are insufficient for this context. Or it may be that there are both primary and secondary attributes, of which the latter prevail among entrepreneurs. This means that only newness is perceivable as a primary attribute, i.e. a definite prerequisite for application of the innovation concept - no matter the context (technological, administrative or marketing innovation) and perspective (theory or empiricism). What does this mean for export research with an innovation perspective?

Entrepreneurs perceived that export adoption as an innovation should fulfill the following attributes: newness, deeper export involvement, one's own initiative and free choice to start exporting, of which only newness could be seen as a primary attribute.

SUMMARY AND CONCLUSIONS

At an abstract level there is actually only one feature common to all definitions of innovation - no matter the context or perspective, namely newness. Its meaning, however, varies according to the potential adopter of an innovation. An innovation always relates to something totally new or to a certain degree of change. There is also another attribute - utility - which seems to be strongly present in technological innovations in particular - no matter what the perspective. Innovation is thereby often also viewed as a good thing simply because the new idea must be useful.

According to Downs and Mohr (1976) most, if not all, characteristics of innovations ultimately turn out to be secondary attributes of innovations. In this sense we might change the prerequisites for a primary attribute; the meaning of a primary attribute may be different for each adopter but it has to exist i.e. it is always present. Based on this, the newness aspect might be perceived as a primary attribute. Secondary attributes are no doubt more numerous by far than primary attributes. Much of the conceptual and methodological complexity surrounding the issue of instability is brought about by the existence of secondary attributes.

It was not possible to study these through definitions of the innovation concept based on the literature, however.

Most of the entrepreneurs connected newness with export innovation, but also linked attributes that cannot generally be found in definitions of the innovation concept. These secondary attributes, related especially to export innovation (they might also termed context-specific attributes), were deeper export involvement, one's own initiative and free choice to start exporting. The importance of time is emphasized especially regarding the attribute of newness but also for export involvement. The former attribute refers to the non-existence of past experience, the latter to timing and the extent of export adoption.

This study aims to state the prerequisites for the application of the innovation concept in export research, i.e. the prerequisites to perceive export adoption as an innovation. The innovation concept evidently has its general attribute, newness, which not only covers all kinds of innovation but should be perceived as the minimum prerequisite for the application of the innovation concept, i.e. as the primary attribute. This means that the innovation perspective as applied in export research automatically presumes that export adoption is new for its adopter. Among the case firms there was, however, one owner-manager who could not perceive export adoption as new for his firm - the newness requirement was not fulfilled. Based on Rogers and Shoemaker's study (1971), the subjective evaluation is sufficient to justify the newness; this means no matter whether the adoption of export or any other aspect is objectively new. However, innovation-based models and concepts in export research do not separate cases where the innovation concept is more or less appropriate. Is the lack of perceived newness a reflection of current changes in export adoption in small businesses?

This study indicates that changes in firms' internationalisation may affect the theoretical basis from which to study the phenomenon. This research should next concentrate on how the newness requirement for export adoption is fulfilled in small businesses' internationalisation and how this relates to firms' adoption lag. The entrepreneurs' suggestions of secondary attributes should also be studied in greater depth to discover the real innovative nature of export adoption. This implies that the export adoption process also has to be taken under study. This paper further gives cause for wider discussions of the content of an innovation process. Based on the original ideas of Schumpeter, more emphasis should be given to the contents and structure of an innovation process: how the different functions, i.e. supply, product development, production and marketing, relate to each other in the chain of innovations. Are there different innovation processes or are they actually different dimensions of one larger innovation process?

This paper aims to establish a basis for the appraisal of the usability of the innovation concept in an export context, perhaps a further step in setting the rules for the realisation of export adoption as an innovation.

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Appendix: Case Descriptions						
	Firm A	**Firm B**	**Firm C**	**Firm D**	**Firm E**	**Firm F**
Year of Establishment	**1986**	**1987**	**1986**	**1987**	**1983**	**1980**
Employees	**12-14**	**5**	**8**	**10-12**	**4.5**	**4**
Turnover FIM	**7.5**	**1.6**	**3.8**	**8**	**0.5**	**0.8**
Main Products	**data and alarm systems**	**moulds (patent), products, production lines**	**coating cutters**	**equipment for water purification**	**patterned cloth, children's furniture**	**clamps**
R&D Share of turnover	**20%**	**4-5 FIM**	**?**	**3-5%**	**15%**	**10-15%**
Major Clients	**system suppliers**	**subcontracting**	**subcontracting**	**final users**	**shops**	**wholesale firms**
Year of export adoption	**1987**	**1987**	**1988**	**1987**	**1986**	**1987**
Export share	**63%**	**45-50%**	**2%**	**80%**	**30-40%**	**25%**
Manager's educational background	**radio engineer**	**engineer**	**master of economic sciences**	**water chemist**	**marketing institute; TEVA institute**	**machine engineer**
Manager's working background	**large experience in a related business**	**large experience in a related business**	**no experience in a related business**	**large experience in a related business**	**no experience in a related business**	**no experience in a related business**

THE POINTS OF TRANSITION IN REFORMING THE UNDERSTANDING AND MEANING OF ENTREPRENEURSHIP

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ABSTRACT

This study approaches entrepreneurship from the cultural, multidisciplinary perspective. It describes the meaning and purpose of entrepreneurship as an ever-changing reflection of culture, as a phenomenon searching for new forms through points of transition in the course of history. This presentation consists of two parts. At the beginning of the first part, I present the epistemological and methodological basis and data used. I will then outline two frames of reference developed for the analysis. The first one describes how the concept changes through points of transition in the course of time. The second one outlines the hierarchical, interactive nature of culture. In the second part, I apply the frames of reference to entrepreneurship. Two points of transition will be found as a result of the analysis. The first one concerns the detachment from craft entrepreneurship and the second one the detachment from the organization, the ordered, externally-organised and controlled way of behaviour. The second point of transition produced two new forms of entrepreneurship. Traditional entrepreneurship was accompanied by intrapreneurship and individual, self-oriented entrepreneurship. In the last chapter the study finally reveals the latent, cultural role of entrepreneurship in society. It is suggested that the role of entrepreneurship can be regarded as an instrument in changing the culture of an era.

CULTURE AS A FRAME OF REFERENCE IN ENTREPRENEURSHIP

From an epistemological point of view , this study represents postmodernism. The key element in postmodernism is the diversity of knowledge (Lyotard, 1984). Knowledge is not one but many. It is dependent on the human mind. It is born through and by an interractive process between the interpreters and reality (Kvale, 1991). Man cannot say whatever he wishes about the world, but rather the world allows and makes possible what can be said about

it (Wahlström, 1992). Referring to Kurt Lewin, man is dependent on the world that is known, not necessarily on the world that exists.

While abandoning the unified idea of knowledge, postmodernism emphasises its local nature. Narratives live side by side with epics. Ideas, concepts and memories are born out of social interaction, being accomplishments of language. Meaning is construed discursively, at a certain time and in a certain place (Hammerslay, 1992; Niiniluoto, 1994; Putnam, 1992). Thus knowledge is not absolute, but the result of negotiation. A human system can exist only in meanings, or in the reality of language. The signs, structure or style of the language is not important, but rather the meaning transferred by language and produced by interaction.

In this study the data consists, on the one hand, of historical events in the time period when entrepreneurship as a concept and phenomenon has developed, and on the other, of the comprehension of entrepreneurship inherent in scientific models. The development of scientific models implies a metacultural, negotiated understanding, which has been created and mediated through language. This understanding converses with events in reality, with industrialisation and with the time, when the western world was overtaken by organisations and an organised manner of behaviour. In the interaction process between historical events and the meaning of the concepts, this study reveals the possibility of knowledge. Referring to Baht's existentialistic knowledge, this knowledge has existed, but has not been present. This conversation gives rise to a conflict, which reshapes and rephrases the comprehension of entrepreneurship. The man who had the key to this knowledge was Max Weber. When his idea about entrepreneurship turned out to belong to the same story as Schumpeter's as well as Adam Smith's, the different narratives formed an epic.

THE DEVELOPMENT OF THE CONCEPT 'CULTURE' THROUGH POINTS OF TRANSITION

Culture itself as a term is a product of culture. The content and meaning in different cultural explanations are reflections of the time, and place of their birth. For example, Kroeber and Kluckhorn identified 164 different definitions (for the concept of culture see e.g. Aaltio-Marjosola, 1991; Keesing, 1981; or Murphy, 1989).

As a concept, culture has its roots in Latin. The word 'cultura' referred to agriculture. Thereafter, its meaning has expanded and diversified. Sometimes it refers to civilisation, sometimes to habits of life. This multitude of views on the semantic understanding of culture follows from its different definitions. In anthropology, the field of science studying culture, it refers to learned accumulated experience (Murphy, 1989, p. 68).

Even though different scholars have a different focus in their definitions, on the general level, culture can be regarded as referring to collectively created, accumulated history, a sort of heritage, which is transferred intentionally or unintentionally from past to present, and from present to future. What differentiates nature from culture is the human being. Culture is something socially created. How this socially-created heritage is supposed to be born can be seen in the different approaches. Basically, there are two different extremes of ideas. One considers the human being as a product of his upbringing, while the other regards him as the fixed outcome of biological heredity. These two extremes have undergone different variations in the course of time. The meaning of culture has on the one hand expanded, and on the other sharpened and narrowed, attaining a more specific and precise meaning. This story of culture can be read by following the development of different cultural traditions.

The Finnish scholar, Matti Sarmela (1993) classifies the different traditions of anthropology into four categories: 1) the historical school, 2) the structural-functional school, 3) the intracultural school and 4) the transcultural school. By analysing these four traditions, their differences can be identified as being related to the time at which they emerged. Figure 1 displays a concise presentation of the chronological order of these traditions as well as their essential features. The presentation focuses on the point at which each one was born.

The theme of cultural evolution started in the 18th century, and dominated 19th century anthropology. Basically, culture was connected to 'order'. Provocatively expressed, it actually got an almost synonymous meaning to that. By culture, order was created among chaos or among uncivilised communities. This order took a certain form. All societies tend to go through the same stages in the same order toward a civilised, organised society. The experience of each stage of evolution is necessary in order to attain the next one (Harris, 1982; Murphy, 1989). The end of this unilinear path had its idol in the white race and western European civilisation.

Some of these early ideas of the historical school are still alive today, implicitly or explicitly. Organization and planning still dominate our everyday life, giving us in these turbulent times a feeling of security. Even so, the focus in the tradition has changed. Neo-evolutionist theories consider change instead of evolution as a progressive development. Multilinear and differential explanations especially represent this line of thought. The multilinear school regards the development of culture as a complex process depending on different factors and elements. However, there are some resemblances in this process, since the main streams and trends in the world, such as the emergence of capitalism and the industrialised form of production, influence and reflect on every society. Differentialism, in its turn, suggests that each area of culture has its own, special and accumulated development.

FIGURE 1
The Transitions in the Explanation of Culture in the Course of Time

The Era	Cultural-Historical School	Structural Functional School	Intra-Cultural School	Trans-Cultural School	Economics
The early 1700s to the late 1800s	Starting point of early evolutionary theories: culture as an order; superiority of white race; idea of culture as universal, unilinear deterministic				
First Point of Transition					
In the early 1900s	Critical school with focus on the internal development and uniqueness of the community or culture	Challenging the idea of determinism, focus on interaction and needs of society			
Second Point of Transition					
From the 1970s to the 1980s			Instead of an origin evolution, function; focus on relationships among human beings and culture and their dependence on their own culture	The human being as an universal creature	
Third Point of Transition from Distinct Disciplines to Different Fields					
From the 1980s onward					Organization culture and strategic planning as new areas for research in culture

Beside the evolutionists, another school of thought emerged in this tradition, diffusionism. It emphasizes the way in which culture was diffused into a society.

The focus of the historical school met with its first major change by the critical school in the early 1900s. The criticism was addressed toward the universal aspect of culture, which was expected to result from an desirable, successful development. This is the phase at which the first point of transition in the development of the concept can be identified. The cornerstone of previous understanding was questioned. The new emphasis concentrated on the internal development and the uniqueness of a community or culture. The father of this critical approach was the American, Franz Boas.

This same line of thought emerged in the structural and functional schools, which dominated after World War II. Their interests lie in the structural and the functional aspects of culture, not in change, as their predecessors' interests were. The pioneer in this line of thought at the beginning of the 20th century was Emile Durkhaim. For Durkhaim, social context and the needs of society were important. From then on the tradition proceeded within two schools: French structuralism and English functionalism.

According to the representative of the former, Claude Levi-Strauss, the mind works in a dialectical fashion. In short, the core of his ideas was, that our mind sorts perceptions into paired opposites, which are then reconciled. This process is not possible without language. Language is a necessary media for that. It is not only an instrument to outline and understand the world, but through language, we can also experience and create culture. In Levi-Strauss' ideas, we can find the way concepts have developed: previous understanding is found inadequent in describing phenomenon. The conflict between reality and our thoughts then leads to a change in an understanding of the concept directing our attention to the issues, which allows us to resolve our confusion. The old meanings don't disappear, however, but rather the concept carries them on in some form into the future. This is typical of culture. It changes slowly, modifying itself in the course of time.

The functional school unveils, on the other hand, the latent meaning of culture and the endeavour toward cohesion involved in it, and on the other, culture's role in assuring survival. This is an issue adaptable to entrepreneurship as well. The European Community has allocated many resources to entrepreneurship and SMEs with the aim of solving the unemployment (see e.g. ESF, 1995). The question could be asked, has entrepreneurship beneath this endeavour some deeper, latent meaning in our society?

When the explanations of culture through structure and function turned out to be inadequent to explain its complexity, the human being and his relationship to and dependency on culture started, in the 1970s, to demand attention. The intra- and transcultural schools emerged. The former concentrated on culture from society's own perspective, while the latter focused on comparisons between cultures. At this point a transition was met in the understanding of culture.

Intracultural traditions can be divided into two categories: 1) Culturism, sometimes called psychological anthropology (see Sarmela, 1993; Alasuutari, 1994; for the former; Murphy, 1989; for the latter) and 2) ethnoscience and especially its sub category, symbolism. The first one focuses on the binding between the human being and culture. How and to what extent does culture affect man and vice versa? Scholars famous in this tradition are for example Adam Kardiner, Margaret Mead and Geoffrey Gorer.

The second tradition, ethnoscience, portrays culture from its members' perspective. The focus is on the concepts and cognitive systems - explanations, the body of knowledge which members of the culture draw on in understanding their world and one another (Keesing, 1981). This leans on the idea that each culture and language form a system of concepts, values and symbols, which is open only to those who have the keys to them. In symbolism, the key concepts are communication and meanings. Those things considered as important get meanings through symbols. They are things regarded as valuable for surviving. One field in this area of thought is semiotics. In semiotics, culture is born and transmitted through meanings (Czarniawska-Joerges, 1988 or Gahmberg, 1986).

The third point of transition was reached in the 1980s, when it was noticed that actually culture belongs everywhere. It is like a crossroads where different fields of science meet. Since then the idea has expanded. Research in culture has focused on different fields instead of disciplines. In economics, for example, it has conquered the areas of organization development and strategic planning (for the former see Aaltio-Marjosola, 1991;1992; Frost & al., 1985; Hofstede, 1991; Juuti-Soikkanen, 1994; Schein, 1985; Smircich, 1985; or Wohlgemuth, 1991; for the latter, Näsi, 1991; Peters-Waterman, 1982) .

While following the development of culture, it can be noticed that different explanations gathered around it in the course of time. In this process, a certain road can be identified. Like culture itself, the understanding of concepts changed too in passage through the points of transition. The inadequacy of the previous understanding of the concept in describing reality creates a conflict. The dualism between the models or explanations and reality causes a search for reconciliation. This is accomplished by concentrating on the most confusing, previously abandoned aspects in the explanations. Thus on the one hand, the understanding of the phenomenon grows, and on the other, it acquires more specific forms. These conclusions allow us to suggest that same kind of path could also be identified in entrepreneurship. Are there parallel points of transition in its development and has its meaning changed, expanding and also acquiring more specific forms in the course of time? This path will be examined in part II. Before that, however, this study will be located among the various cultural explanations. As a result of this process, the second tool for analysis will be constructed.

CULTURAL, HIERARCHICAL CIRCLES AS A FRAME OF REFERENCE

In Figure 2 the central aspect of culture applied in this study has been drawn together. Within the cultural-historical tradition this study adopts two aspects from the multilinear and critical schools. These concern the nature of human involvement and the hierarchical nature of culture. In the course of time, instead of evolutionary determinism, human action became an essential element in the creation of culture. Culture is socially created among and through people. Thus human nature is a basic element in culture.

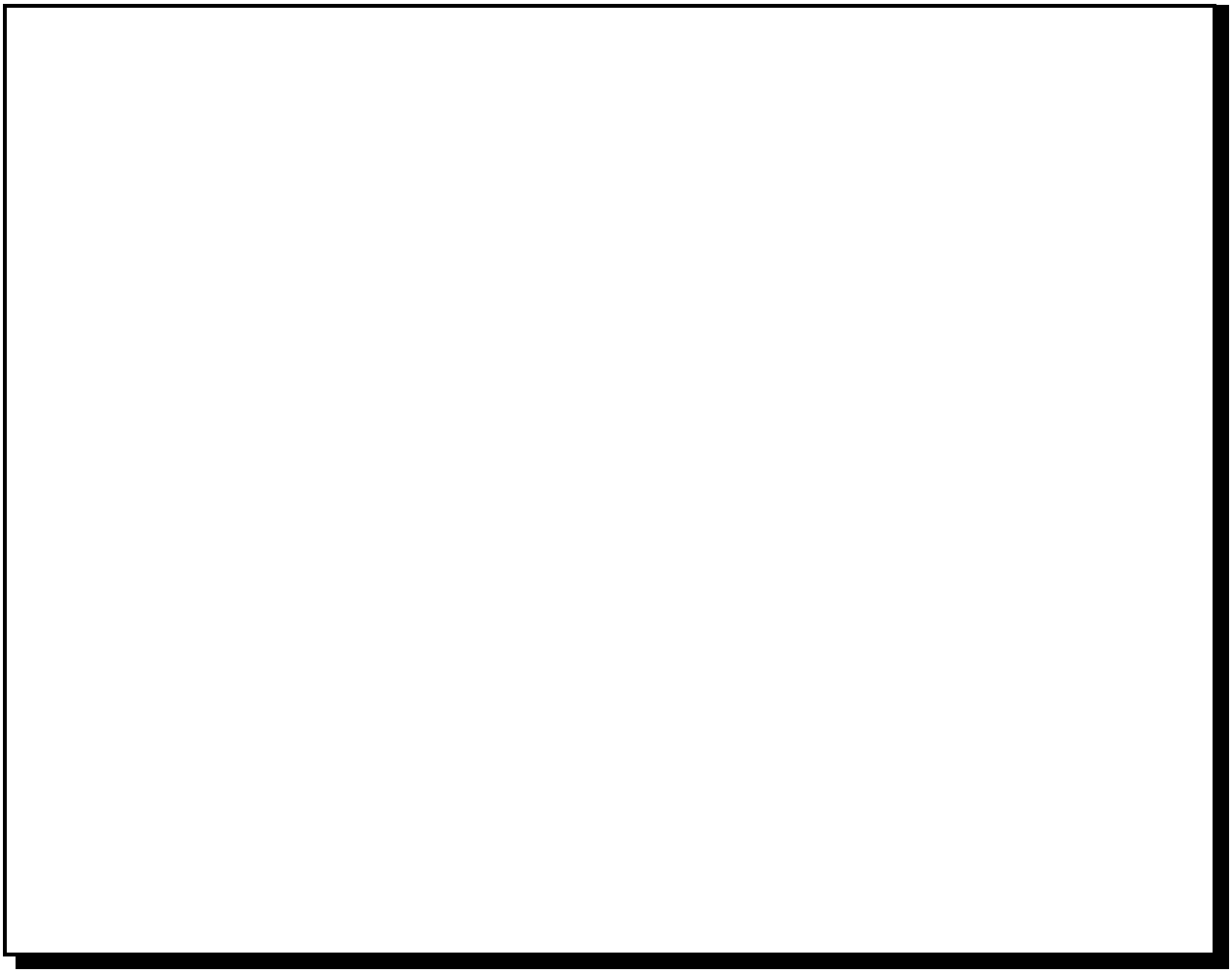
Figure 2: The Location of this Study among the Traditions

Cultural-Historical School	Structural Functional School	Intra-Cultural School
MULTILINEAR EXPLANATION **complex process with certain similarity, same mainstreams affecting on cultures** **CRITICAL SCHOOL** **uniqueness of each culture** **FOCUS ON HUMAN ACTION INSTEAD OF EVOLUTION** **THE HIERARCHICAL NATURE OF CULTURE**	**STRUCTURALISM** **language is a media to experience phenomenon;** **dualism of the human mind** **FUNCTIONALISM** **the possibility for latent explanation**	**CULTURISM** **understanding of a phenomenon is a product of the culture in which it has been born;** **culture as a life-long learning process** **SEMIOTICS** **concepts carry in themselves meanings, things and values regarded as important;** **through concepts meanings are carried from past to present and into the future**

From the multilinear school is adopted the idea of mainstreams in the world affecting the formatting of culture. When this is combined with the critical school's idea of the uniqueness of each culture, we meet with a hierarchical order in outlining culture. To frame this order we can apply the triangle produced by Hofstede. This is presented in figure 3.

Figure 3

The Hierarchy of Culture

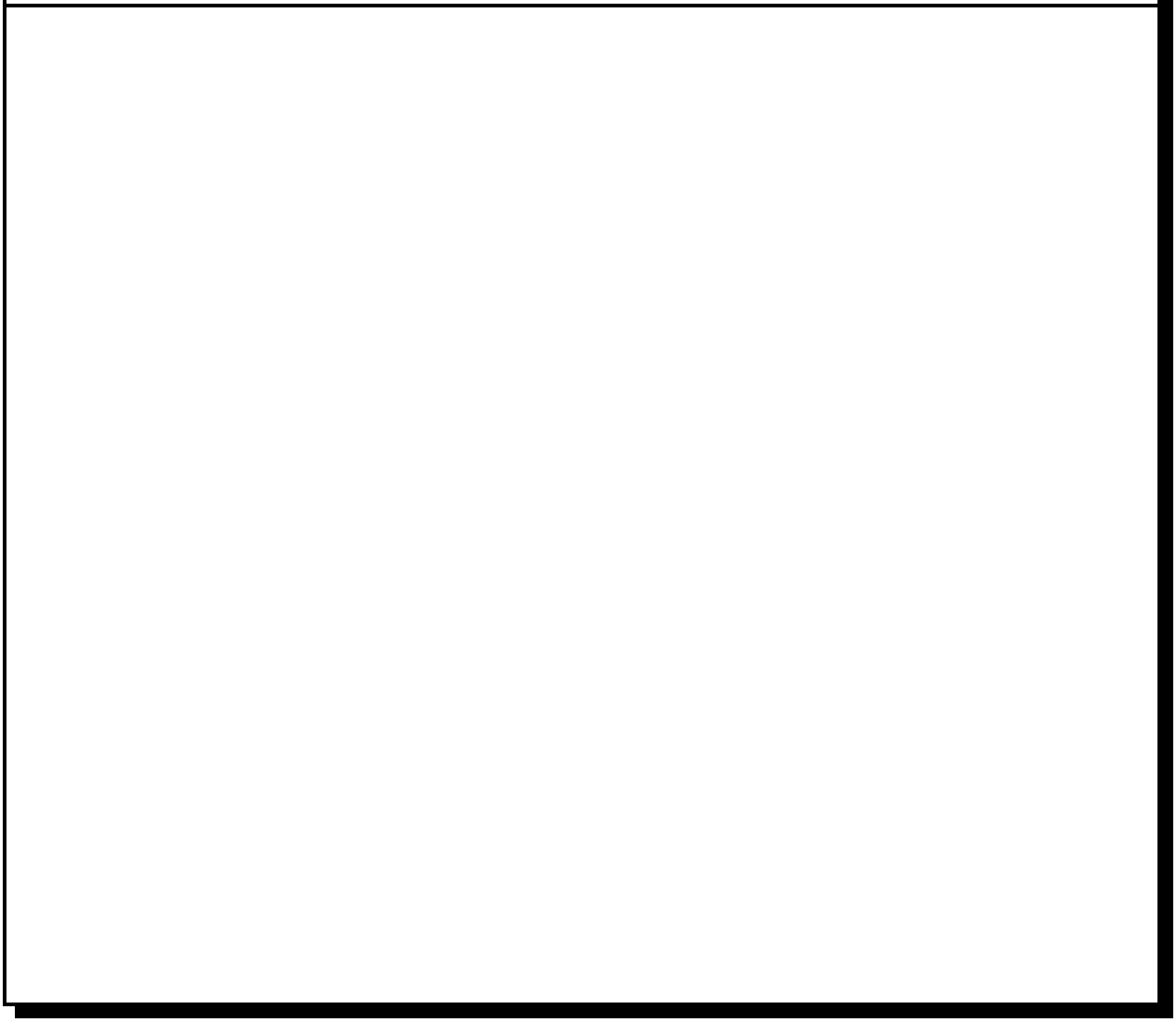


In this figure culture consists of three hierarchical levels. At the bottom, as the corner stone of everything is human nature, which is inherited and universal. This is followed by the culture of a specific group. This is learned in the course of life. Finally there is personality, specific to the individual. This is inherited and learned.

When the multilinear idea is combined with the triangle, it will be extended by one level, the culture of the era. However, it should be pointed out that culture, as it is referred to here by the multilinear school, is not world-wide, but rather means Western civilisation. Thus it has a restricted context, where it emerges. In the case of entrepreneurship this is adaptable, since entrepreneurship itself as a concept and as a phenomenon is a product of western, industrialised countries. As a matter of fact its understanding is a product of industrialisation. Thus it has a certain time and place, where it has emerged and been outlined. Within this culture of era, each nation produces its own specific culture. It filters the mainstream into its own habits. Further following this line of thought and adopting the

ideas of the critical school, each group has its own, specific culture. Thus the triangle is completed with altogether five levels. To be able to combine our phenomenon, entrepreneurship, with the cultural hierarchies, we choose instead of the triangle the form of a circle.

Figure 4: The Cultural Circles



In Figure 4 our frame of reference is completed. The outermost circle is human nature, inside which are successively the culture of the era, then national culture, followed then by our target, the culture of entrepreneurship. Inside the innermost circle are located finally the phenomenon entrepreneurship and an individual entrepreneur and his enterprise.

Next the question should be asked: how does one approach and study this frame of reference? The answer will be found from some of the ideas of the structural, functional and intracultural schools.

The structural school gives us a fascinating insight into the possibilities, which a concept can offer not only as an instrument to study entrepreneurship but also to change one's understanding of it. Thus it is actually a media for changing the culture of entrepreneurship. When our understanding based on past experiences comes into conflict and cannot explain a phenomenon, the human mind tends to create a new explanation and new structures. These in turn guide our behaviour. According to Levi-Strauss this is done through language. Through language and the meanings involved with it, we experience the phenomenon. As a matter of fact, that is how science itself has developed. Thus the concept as involved with science can tell us the story of how entrepreneurship has been experienced and understood. It forms a metacultural understanding of the phenomenon. Thus the story of entrepreneurship can be opened up using scientific explanations. It can also be suggested that even though there seems to be an apparent discrepancy between reality and those models, according to the structuralists, there must be the possibility for reconciliation between them. This is the challenge this study has taken up and an endeavour is made to find this reconciliation.

The functionalist school offers us the possibility of supposing that entrepreneurship can hold in itself some latent meaning and role in our society. Is there one, and what could it be: this is the other challenge accepted in this study.

Some ideas will be adopted from the intracultural school. Culturism gives us the opportunity of approaching culture as a life-long learning process, which is at the same time collective and individual by nature. In this process the models found most successful will be transmitted. This process has conscious as well as unconscious aspects. Thus past models of behaviour are guiding our behaviour today, and our behaviour will affect our understanding of the concepts.

The exciting dualism, in which culture is at the same time both a collective and an individual phenomenon, is manifested in the idea of universal human nature. Human nature is at the same time universal and yet completely unique. Traditionally this uniqueness has been explained as the distinction between animal and man. But actually the universal feature in human nature is the uniqueness of each man: the definition employed in this study. Since this study involves entrepreneurship, this is probably more essential than with some other phenomenon, since traditionally there has been always an individual entrepreneur involved.

Another important point adopted from culturism is the idea that the phenomenon is a product of the culture in which it has been born. This concerns the whole context: not only the place, but also the time, circumstances and actors. Thus entrepreneurship as a concept is a product of western industrialised countries at the time of industrialisation. Even though it

is possible to argue that the roots of entrepreneurship can be traced back to nomadic life or agricultural society, this can only be done using concepts produced in the course of industrialisation. From this perspective it seems to be natural to use scientific models as data in a scientific study.

Semiotics gives us final permission to believe that concepts are those objects which carry in themselves the meanings and understanding of the phenomenon. When these concepts guide our behaviour, they affect culture as well as culture affects them. Thus there is an interaction between reality and concepts. This interaction does not only take place between reality and concepts, but also between different levels of culture. Thus narratives meet epics, both affecting and modifying each other. The scientific concepts living today can be regarded as those which have been shown to represent the most successful, negotiated understanding of phenomenon. Our collective understanding of past entrepreneurship is manifested in them.

The tools to approach entrepreneurship have now been constructed. Next in part II their validity as frames of references will be evaluated in attempting an understanding of the development of entrepreneurship.

THE POINTS OF TRANSITION IN ENTREPRENEURSHIP

THE FIRST POINT OF TRANSITION: DETACHMENT FROM CRAFT ENTREPRENEURSHIP

Industrialisation is the context in which the meaning of entrepreneurship has developed. It is the mainstream, the culture of the era, which has most deeply affected the understanding of entrepreneurship. Industrialisation started in England in the 18th century. 'The technological and economic changes which began in England during the last third of the eighteenth century represented something new in human history' (Dillard, 1967, p. 238-240). There were two basically different methods of production in late medieval Europe. One, the handicraft system, produced products for the local market, the other for the overseas market, international trade. In this process was involved not merely production, but rather the two represent extremely different social systems (Cameron, 1995; Ethier, 1988; Grubel, 1981; Kenwood-Loukheed, 1971; Williamsson, 1983). The handicraft system was a secure, controlled and organised system and environment, which granted a modest and secure standard of living to its members. Industrialisation, for its part, required risk bearing, capital and abilities to trade in unknown international markets. It needed psychological and material resources to organise rational, effective large scale production. Industrialisation is the story

of the triumph of mass production and international trade over the local system of production. The development of the understanding of entrepreneurship describes this battle.

From entrepreneurship's point of view, two epochs can be identified in the development of industrialisation. The first lasted from the end of the 18th century to the 1970s, the other thereafter (Alasoini, 1990; Piore-Sabel, 1984). The former is the context in which the first point of transition in entrepreneurship can be located. The latter is the environment in which the second point of transition occurred. The first period is characterised by continuous growth and a high employment rate. There was a growing demand for production. From the 1970s onward, we find a different kind of reality. This was and still is characterised by an uncertain and most complex environment, in which growth and productivity rates have become slower.

During the first epoch in the development of entrepreneurship there are three central phases on which to focus. The first phase has its starting point in the late 1700s, the second one occurs during the expansion of industrialisation in Germany at the end of the 1800s and beginning of the 1900s. The third phase spans the time when industrialisation underwent its rapid expansion in USA at the beginning of the 20th century.

The roots of entrepreneurship can be traced back to the medieval handicraft system. The characteristics of the handicraft system were the technical skills perfected through life-long learning, small amounts of capital and an integration of the producing and trading functions. Demand and supply were controlled by the crafts and later by the guilds. In an entrepreneurship career, i.e becoming the owner of a shop, one started as an apprentice. The apprenticeship was followed by a period as a journeyman. Finally the fully-trained and accredited master craftsman was able to establish his own shop. Each craft had its shops located in the same street. It was thus easy to control the prices as well as the raw materials. The craft granted each craftsman the same amount of raw materials at the same price. There was no possibility for the accumulation of capital. The system granted its members a meagre but sufficient standard of living according to each man's social status. Thus each craft had the power to control education, production and the market in a particular industry.

The power of the crafts was not only restricted to work: they controlled social life as well. Apprentices, journeymen and masters were often living under the same roof. They formed a social group. Behaviour was guided by the same traditions, habits and rules forming a culture of its own.

This predictable, secure, social order was threatened by industrialisation. Guilds were founded from the 13th century onwards to protect crafts against outside competition. This was the point from which the difference between the independent entrepreneur and wage earners and large-scale enterprises started. The craft system constituted its own entrepreneur culture, legitimised by society and characterised by local markets, a stable, static and predictable life-cycle and a hierarchical social order. Industrialisation and international trade represented

another kind of environment. What was needed for that was quite opposite to those characteristics, which granted a living in the medieval handicraft system. Gradually the craft system gave up and industrialisation gained dominance. However, the craftsman did not disappear, he still exists today as one kind of entrepreneur.

Science started to model and describe this new environment. Its interest turned to those new, unknown circumstances. Success in new circumstances required new models. The dualism between past models and present reality required reconciliation. This process can be identified in the development of the meaning of entrepreneurship.

The roots of an entrepreneur for and in the industrial revolution can be retraced to the semantic development of the term (for a short description of the semantic history based on Redlich, 1949 and Hoselitz, 1951, see Haahti, 1989 p. 214-216; Petrin, 1991). The first meaning can be found from the French verb 'entreprende' in the twelfth century. It just meant to do something without any economic connotation. In England the terms adventurer and undertaker were used to denote an entrepreneur, followed by such terms as projector and contractor from the 14th century onwards. These terms referred to such functions and qualities as an exciting, unknown experience, one's own risk, a certain task from the Crown and risk bearing (see figure 5 below). All of these were characteristics unknown to medieval craftsmen.

Only from the 18th century onwards did a more outlined approach start to describe the phenomenon 'entrepreneurship'. The concept emerged along with industrialisation and developed as a product of it. First conceived by Say and Cantillon and further developed by Adam Smith and his followers, entrepreneurship took an a more specific, scientific meaning (Barreto, 1989; Casson, 1982; Entrepreneurship development in public enterprises, 1991; Kirzner, 1991; Kovalainen, 1993; Okko 1986; Wilken, 1979).

In scientific explanations of entrepreneurship two different approaches can be identified. One follows the semantic development of the term. Its efforts turned towards the conflict between craftsman and entrepreneur in an industrialised environment. In the other, attention was concentrated on international trade and open markets. Its focus was not on entrepreneurship, but on equilibrium between supply and demand under conditions of rational and perfect information. It thus described the other side of the coin in the story of industrialisation.

Figure 5
The Semantic Development of an Entrepreneur and Entrepreneurship

The Century	Term	Meaning

1100	**Entreprende**	**to do something** **(no economic connotation)**
1300	**Adventurer** **Undertaker**	**exciting, unknown experience** **own risk, assignment from the government, an honest man**
1300 Onwards	**Project** **Projecter**	**a speculator**
1400	**Contractor** **Entrepreneur**	**assume some risk**
1500	**Contractor** **Entrepreneur** **Clerics**	**some violent warlike action** **large contracts with the Crown**
1600	**Contractor** **Entrepreneur**	**risk-bearing**
1700	**Entrepreneurship** **• Say** **• Cantillion**	**improving economics** **employer=uncertain income** **employee=certain income**

The traditional way to classify different approaches to entrepreneurship is to divide them into three categories: 1) economics, 2) sociological traditions and 3) psychological or social-psychological traditions (Kovalainen, 1993; Vesala, 1992). This classification also follows the chronological order (see figure 6 below). The roots of economics can be found in British society, in the time and place of the start of industrialisation. Its father was Adam Smith (1723-1790). Sociological theories, for their part, originate in Germany at a time when industrialisation was taking place there in the end of the 1800s and at the beginning of the 1900s. Their explanations are based on Karl Marx (1818-1883) and Max Weber (1804-1891). In Germany, too, new circumstances required new ways to outline them. The American school expanded at a time when the USA underwent rapid expansion in its industrialisation in the early 1900s. This is also the time at which the Austrian school was born. The name Austrian is misleading, since the pioneer of the tradition, Joseph Schumpeter, even though was an

Austrian, made his contribution in the USA, working as a professor at Harvard University from 1932 till his death.

The classical and neo-classical schools were not interested in entrepreneurship. In the beginning, their interest lay in macroeconomics and later in the behaviour of organisation in the environment of large-scale enterprises. The efforts, made in many contexts, to combine these explanations with entrepreneurship are misleading (see e.g. Peil, 1989 or Lahti, 1991). These macroeconomic theories and later the microeconomic theories are telling the story of industrialisation, but not from entrepreneurship's point of view. Their reconciliation of the conflict between the industrialised enterprise and the craft system is accomplished by concentrating on the former (Bell, 1981; Kirzner, 1991; Kyrö, 1992; 1995; Milgrom-Roberts & Sherer, 1980). Barreto (1989) describes this story as the disappearance of the entrepreneur from microeconomical theories.

The new entrepreneur can be found in Weber's and Schumpeter's stories (see Weber, 1969; 1990 or Kovalainen, 1993 for the former and Barreto, 1989; Dahmen & al., 1994; Kyrö-Nissinen, 1995a; 1995b). Both of them are telling the same story. The differences in their stories can be explained through differences in their national cultures. They are filtered through and characterised by the national cultures in which these men were living.

The core of entrepreneurship for Schumpeter is innovation. The entrepreneur combines resources in an innovative manner, thus creating something new. For Schumpeter innovation breaks through behaviour in a radical manner. The entrepreneur is one, who does things in a novel fashion. The entrepreneur's decision making is guided by intuition, not by past models and, in this sense, past experiences. The entrepreneur is a person, 'who desires to find a private kingdom. He has a will to conquer, the joy of creating, of getting things done or simply exercising one's energy and ingenuity' (Barreto, 1989, p. 30). However, this adventurer who fights against windmills and resistance to change, is also a co-operator, who succeeds in organising the inputs, including financing, needed for output. This entrepreneur is an opposite to the craftsman.

Figure 6: First Transition in the Meaning of Entrepreneurship

EPOCH	HANDICRAFT SYSTEM	SEMANTIC DEVELOPMENT OF ENTREPRENEURSHIP
500-1700	Shops and Home Market • static, hierarchical working environment and social status • secure future • no gains, no accumulation of capital	1100-1700 Independent Adventurer • adventurer, risk bearer • building his own future in uncertain circumstances • working on the basis of assignments • division between government, employees and entrepreneurs
1700-	Start of large scale industry and companies along with industrialisation, international markets, and industrialised form of production	

Start of Epoch	Representative of the Explanation	Focus of the Explanation	Nature of the Explanation	Stage of Industrialisation
in the late 1700s	The Classical and Neo-classical School Adam Smith (1723-1790)	Open International Markets and Mass Production	Equilibrium between demand and supply in a rational and open environment. (Entrepreneurship had no role in this.)	Starting and proceeding toward large-scale industry
at the turn of the 1800s-1900s	Sociology Max Weber (1864-1920)	Entrepreneurship as a Cultural Process The Firm and the Entrepreneur	A dynamic description of the entrepreneur as a responsible actor and as a risk-bearer in an uncertain environment. Entrepreneur realises himself through work. He got rid of old, traditional habits.	Germany in turn about to dominate industrialisation
in the early 1900s	The Austrian and Neoaustrian School Joseph Schumpeter (1883-1950) American School Barnard Hawley	Entrepreneurship and Entrepreneur as a Dynamic Interaction Process The Firm and its Success	Entrepreneur as an innovator and as a producer of economic advancement. Human action as the core of development. Entrepreneur as an inspired adventurer, inventor, risk-bearer, breaker of old habits, and creator of new habits and ways of behaviour. Entrepreneur as a responsible manager of a firm.	Rapid Expansion of Industrialisation In the US, the mechanisms of world trade and environment became more complex

For Weber the free organisation of capital was done by entrepreneurs. For him this process involved rational action and dedication: Movement for movement's sake, work for work's sake. Like Schumpeter, Weber too regards the entrepreneur as a dynamic co-ordinator of resources. Weber mentioned the capitalistic spirit and its development. Where that spirit exists, it acquires the necessary financial resources for its use. The main focus in Weber's description is in the collective meaning of entrepreneurship. He also regarded entrepreneurship as a detachment from old traditions. Weber mentioned explicitly that his entrepreneur was the opposite of the craftsman's privileged formality. It is amazing how little attention ownership and financing received in either Schumpeter's or Weber's theories.

In these stories a new meaning for 'entrepreneur' was created. This creature was the opposite of the craftsman. In the course of time changes in the environment required new ways of behaviour. The dualism and conflict between the old and new demands were solved by changing the meaning of the concept. The reconciliation took place by changing the understanding to answer the changing needs of reality. In this process the first point of transition in the meaning of entrepreneurship emerged.

THE SECOND POINT OF TRANSITION - DETACHMENT FROM ORGANISATION THE ORDERED, EXTERNALLY-ORGANISED BEHAVIOUR

When industrialisation was expanding, another kind of ethos started to spread in Western industrialised countries from the late 19th century onwards. This was the dominance of organization. Denhard has located its origin in the 1870s. He describes it as an era which was dominated by organisational ethics, which in itself offers a way of living in our society. According to Finnish contributor Iiris Aaltio-Marjosola, that was the time when the concept of organization emerged. Sarmela describes this development process from a local culture to a centralised culture. Gradually all our activities became organised outside ourselves. We have implicitly followed the very first interpretation of culture in our lives. We have organised our life-cycles, even time and seasons. According to the functionalist explanation of culture, we believe that organising is a way to secure our existence and success.

Our lives have been divided up into stages by psychologists(see for example Sugarman, 1993 or Tennant, 1993). Different organisations have then been founded for each stage. The efficient citizen follows these steps using the services that various organisations offer for each of them. Nature has been organised as well. We swim in winter, ski in summer, and so on. In welfare states more and more activities concerning our everyday life have been taken over by the government.

When our environment has changed, and the stable predictable environment has been replaced by a turbulent, unpredictable environment, in which old models do not guarantee success, we have found a conflict between our past models of behaviour and our present reality. Again we have a dualism searching for reconciliation.

In this stream, where on the one hand, we are proceeding toward more and more centralised order and ever larger organisations (EU, Nafta, Nasa), opposite forces are also about to raise their head. This has acquired the label of postmodernism. It refers to a stream in which diversity and individuality are valued. In this stream entrepreneurship has again attracted attention in many fields. It has marched into organisation theories, into other fields of economics, learning theories and so on.

The scientific explanation of the behaviour of organisation can be traced back into two fields of science: microeconomics and organization theories. Basically organisation is a collective phenomenon. Organization is needed when the individual cannot accomplish his goals or fulfil his needs by himself. The focus in organisation theories is on people and their behaviour in an organisation, on the forms in which this behaviour is manifested, or both (Ylä-Anttila, 1983). Microeconomics, on the other hand, concentrates on decision making and the relationship between the organisation and its environment, especially in economics. Both of these approaches have their roots in the beginning of the 19th century. When entrepreneurship disappeared from economics, organisation replaced it.

The early organisation theories are based on Taylorism (Julkunen, 1987). Even in the 1930s and 1940s, Taylor's ideas were already being questioned, but it was not until the 1970s, in a changing environment, that its dominance diminished due to the efforts of the human relations schools. Finally in the 1980s and 1990s, when the old models turned out to be unsuccessful in a changing environment, entrepreneurship entered. However its role was different: now it was harnessed to break the hierarchical organised way of behaviour. The term 'intrapreneur' was first invented for that purpose by Gifford Pinchot. 'Numerous, small intrapreneurial groups interact in voluntary patterns too complex and synergistic to be planned from above' (Pinchot, 1985 p. 11).

Now two forms of entrepreneurship had been created. Entrepreneurship referred to entrepreneurs outside the organisation, while the term intrapreneur referred to entrepreneurs who were inside the organization. This interpretation involves, though, two kinds of phenomenon: collective behaviour and individual behaviour. The implicit assumption behind this is that entrepreneurship is always an individual category. However the organisation is, as a phenomenon, collective by nature. When entrepreneurship has now been harnessed to break an organised way of behaviour, it has received a new meaning and a new category. This is by nature collective. An organisation is not the same as a group of people. As an organization, it has a history and culture of its own. It is thus something different than the

actors of today, even though the actors of today are those who can change their way of behaviour in the present and in the future. Thus time has actually produced three forms of entrepreneurship:

1. **Traditional entrepreneurship, referring to an individual entrepreneur and firm;**
2. **Intrapreneurship, referring to an organisation's collective behaviour; and**
3. **Individual, self-oriented entrepreneurship, referring to an individual's self-oriented behaviour.**

Time itself has produced this new understanding. The meaning of entrepreneurship has undergone change at two points of transition in the course of history. When old ways of acting have met with a conflict between reality and past models, the concept has been modified. Thus its meaning has become extended but at the same time also more specific. This is outlined in Figure 7.

Figure 7: The Points of Transition in the Meaning of Entrepreneurship

500-1700s	**Handicraft System** **Shops and Home Market** **Static, hierarchical working environment, circumstances and social status** **Secure future, no gains, no accumulation of capital**
	First Point of Transition: Detachment from the Craft Entrepreneur
1700s	**Start of large-scale industry and compaines along with industrialisation, international markets, and industrialised methods of production** **Entrepreneur as a change agent, breaker of traditions, creating new ways of behavior, a dynamic innovator, a risk and uncertainty-bearer, a co-ordinator**
	EXTERNAL ENTREPRENEURSHIP
1800s	**Organisation as an ethos of time. Organisations planning and controlling human behaviour at all levels of society**
	Second Point of Transition: Detachment from the Organisation
Late 1800s	**Entrepreneur as a change agent, breaker of traditions, creating new ways of behavior, a dynamic innovator, a risk and uncertainty-bearer, a co-ordinator**

Entrepreneurship	**Intrapreneurship**	**Individual Entrepreneurship**

At both points of transition entrepreneurship has been harnessed to break old stable and hierarchical habits and institutions and to introduce new, innovative, holistic, risk-taking and net-working ways of behaviour. In both cases its role has been to work as an instrument. This development has followed the same kind of path as did the concept of culture. The dualism between scientific explanations and reality has again achieved reconciliation. The inadequacy of previous understanding to explain reality has led to new emphasis and new explanations. Whether it is also a media to change the culture will be seen in the future.

In the cultural circles the culture of the era has been filtered to a national level and still further to smaller groups. What the role of the culture of entrepreneurship is will be seen in the future. If a new era, the era of entrepreneurship is about to begin, then its place is not after national culture, but before it, between the culture of the era and national culture.

This is an exciting idea. If this is indeed the case, entrepreneurship has a more important role in our society than I could ever have imagined. According to the functionalistic explanation of culture, its latent meaning would be to help us to survive by breaking old habits and traditions and by creating a new way of behaviour.

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ENTREPRENEURSHIP EDUCATION IN IRELAND: A LONGITUDINAL STUDY

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ABSTRACT

This paper presents an exploratory longitudinal study that provides tentative evidence that education is a vital ingredient in the process of entrepreneurship and the development of an entrepreneurial base within an economy. Gartner et al. (1994) argue that to understand fully the entrepreneurial process requires starting with an examination of the potential entrepreneur and that as entrepreneurship occurs over time, longitudinal research is critical for some issues regarding the process of entrepreneurship. Longitudinal studies are important because they can measure variables before events occur. Outcomes are likely to change attitudes. Kruegar and Brazeal (1994) argue that when researchers focus on processes underlying an activity, too often they look backward through the lens of existing entrepreneurs. In other words, after the business has started. This study aims to build on research conducted in 1991 by this author (Fleming, 1992). It further investigates the role of education in stimulating graduate entrepreneurship.

INTRODUCTION

A review of the literature on entrepreneurship indicates that few studies track graduate career paths, and in particular the career paths of graduates who have selected enterprise development courses in their programme of studies. There appears a gap in the literature linking education with actual marketplace entrepreneurial behaviour. Entrepreneurship education promotes an awareness of self-employment as a career option and motivates young people to begin equipping themselves with the skills, knowledge and experience required for effective business ownership. Graduates are a striking source of entrepreneurial talent. Many have the motivation and potential to initiate start-up business ventures. Because new business formation is an important component of economic development, there is a need to investigate measures that promote the emergence of greater numbers of graduate entrepreneurs.

In 1991, the author completed the first part of a longitudinal study. A postal survey of 838 graduates of Irish third level educational institutions was conducted. The primary aim of the study was to conduct exploratory research into the productivity of enterprise development

initiatives on a national basis. In the study an interest group of 419 graduates and a control group of 419 graduates were selected. The interest group had participated in an entrepreneurship course or initiative during their undergraduate studies whereas the control group had not. The tentative evidence from the study showed that graduates who were introduced to entrepreneurship concepts and the practical experience of preparing a business plan while at college, were starting businesses at twice the rate of their peers and were involved in family and part-time businesses on a far greater scale. Though the overall percentage of graduate start-ups was low (5%), the graduate entrepreneurs in the interest group were starting businesses at a younger age than those in the control group and were employing a greater number of people, had a substantially higher turnover and were involved in manufacturing as well as service industries. The primary motivation of these graduate entrepreneurs was the identification of a suitable opportunity and the impact of the entrepreneurship course they had completed while at college. The aim of this longitudinal study is to provide further insight into the process of entrepreneurship by revisiting the interest group in the 1991 study and identifying any further movement within the group towards entrepreneurship.

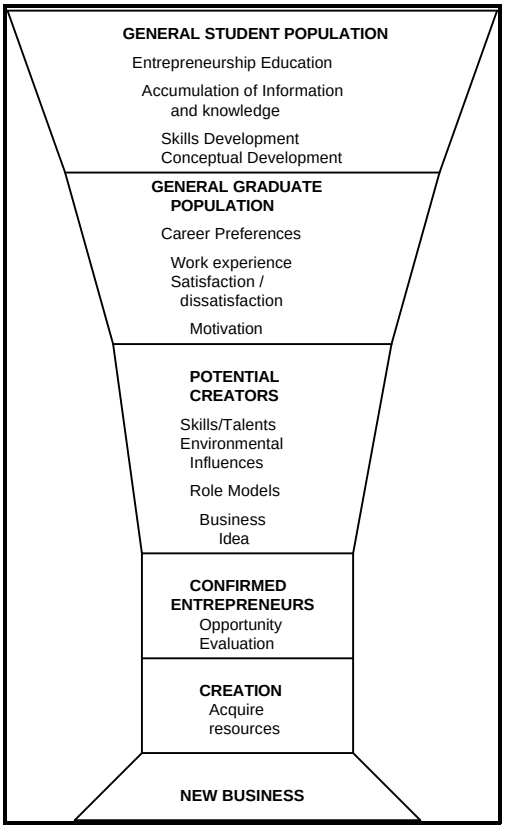
PREVIOUS STUDIES

The primary aim of this study was to conduct exploratory research into the productivity of higher education enterprise development programmes and initiatives. The first step in the research process was a review of the literature on entrepreneurship and in particular education for enterprise. A number of studies dealing with the issue of education for entrepreneurship were found (Scott and Twomey 1988; Sexton and Bowman 1987, 1988; Brown, 1990). It was concluded that further exploratory research on the topic could be valuable. To understand more easily and analyse the complex behaviour and processes involved in this study a conceptual framework has been developed and is displayed visually in Figure 1. The model represents the various stages through which a potential entrepreneur passes to become a confirmed entrepreneur which in turn implies the creation of a new business.

Ronstadt (1985) argues that most people, even entrepreneurs, do not think of entrepreneurship as a career. Only a minority of all future entrepreneurs will know when they attend college that they will probably pursue entrepreneurship as a major life goal. Of those who are considering entrepreneurship while at college, it is envisaged that only a small minority will start immediately after graduating. Another small minority will wait but anticipate their entrepreneurial careers by explicitly choosing to work for someone else in a position or industry which will prepare them for their future venture(s). The vast majority that become entrepreneurs will go to work for someone else without anticipating an

entrepreneurial career. Ronstadt (1985) stresses the importance of sensitising students to the fact that entrepreneurship is a possible career option they will face or consider in the future.

Figure 1: The General Framework



Adapted from Gasse (1990)

Several research studies indicate that students' attitudes towards enterprise and small business are positive (Karr, 1985; Brockhaus and Horowitz, 1986; Scott and Twomey, 1988). Jackson and Vitberg (1987) report that business college graduates and students are increasingly disenchanted with career prospects as organisational employees. Intense competition, cost cutting pressures, and acquisitions and take-overs have resulted in large company restructuring. This has undermined traditional values such as employee loyalty, security, and ownership of results. Consequently, more and more business students view the possibility of starting and operating their own business as a viable alternative to being employed in an established company (Duffy and Stevenson, 1984).

Other surveys support this view. Karr (1985) reveals that 46% of college students consider a 'business of one's own' an excellent way to get ahead. In a University of Pittsburgh survey of 1,000 MBA students from top business schools in the U.S., 44% responded that they wanted to become an independent entrepreneur. In contrast only 34% wished to be a high-ranking corporate manager (Sandholtz 1990). Scott and Twomey (1988), based on data collected from English students, reported that 25% had a business idea and that 41% aspired to self-employment. Figures by Harrison and Hart (1989) revealed that over 51% of a sample of Northern Ireland students expressed a positive desire to run their own business. Hills and Welsh (1986) in a survey of almost 2,000 students, found that 80% expressed an interest in taking one or more courses in entrepreneurship. Brenner et al. (1991) found in their study of 237 graduates in the U.S. that business graduates generally perceived business ownership in a positive light. However, the survey revealed an inconsistency between the graduates' attitudes towards owning and operating their own business and their intentions toward pursuing such a career. When they were given complete freedom of choice, 55% preferred operating their own business. An interesting point was that when they were asked their most likely choice considering their actual situation and constraints upon their options, only 5% indicated that they would probably choose to operate their own business.

Weihe and Reich (1993) in their international study of entrepreneurial interest among business students found that 34.3% of those questioned had an unreserved interest in self-employment. This figure includes a percentage of 3.2% of those who were already employed. The percentage of those who were undecided was 50.5%. An unqualified refusal was given by 15% of those questioned. The study found the highest number of students already self employed, 6%, was in America. Brown (1990) reports that in Japan between 2% and 2.5% of graduates start their own business within a short time after graduation. Fleming (1992) in a study of Irish graduates who had participated in entrepreneurship initiatives and programmes while at college, found that a comparatively high proportion (45%) of the sample reported that the course had a positive effect on their subsequent career decision. The study found that 5% of respondents had initiated a start-up venture within five years of graduation.

It is clear from the evidence of a number of studies in the literature that the preferred career of a considerable number of students and graduates is towards business ownership. However, many students and graduates perceive several obstacles that militate against entrepreneurship, such as lack of experience, or lack of finance, which block the path towards their preferred choice. The problem of this inconsistency may lie in the present business curricula, which have until recently, focused almost entirely on the needs of aspiring middle and functional managers rather than the needs of aspiring entrepreneurs.

Traditionally universities and colleges have not prepared students for self-employment as a career option, resulting in the loss of many potential entrepreneurs. As a result of this

educational bias to large businesses and lack of information on entrepreneurship as a career option, many universities and colleges are offering topics and courses related to entrepreneurship and small business. By taking such action and increasing awareness of how small businesses enter the marketplace and operate, the number of graduates selecting a career path that leads to entrepreneurship should increase.

RESEARCH OBJECTIVES

The overall aim of this study was to evaluate the ways in which graduates' attitudes and behaviours relate over time to new venture creation following exposure to entrepreneurship concepts and practical assignments while at college/university. The following specific objectives were formulated to guide in the development of the research instrument.

To explore the career paths of graduates who participated in enterprise initiatives at the undergraduate level 1984-1989;

To determine the graduate's initial career goals and identify any subsequent changes to these initial goals;

To examine the influence of enterprise initiatives in determining career choice;

To determine the relevance of the graduate's qualification to his/her present work situation;

To ascertain the level of job satisfaction achieved by the graduate with his/her career to date;

To establish the number and type of graduates associated with an entrepreneurial career;

To explore the various factors that militate against self employment;

To establish the relevant factors that encourage self employment;

To evaluate the productivity of tertiary enterprise development programmes in terms of initiating start-up ventures; and,

To obtain a profile of the graduate entrepreneur.

THE STUDY DESIGN

In order to ensure that the results of this study were meaningful, and to compare trends over time, a postal survey of the sample of 419 graduates who had participated in

entrepreneurship programmes (the interest group in the earlier study) was conducted. The purpose of revisiting this group, was as stated earlier, to provide further insight into the process of entrepreneurship by tracking these graduates' career paths since graduation and identifying any further movement towards entrepreneurship.

The randomly selected population sample graduated from Irish universities and colleges during the five year period 1984-1988. The original sample frame was provided by Forbairt, formerly known as the Irish Development Authority (IDA). In 1984, the IDA, the principal industrial promotion agency in Ireland, introduced an annual Student Enterprise Award scheme. The programme was designed to provide undergraduate students with the opportunity to demonstrate their ability to set up a business venture of their own. The objective of the programme is to encourage students to examine the option of self-employment as a viable career alternative and to realise that ideas can become businesses. Students are encouraged, while still at college, to identify a business idea, research it for viability and market potential, prepare a formal business plan and defend it through a series of assessments and live confrontations as would happen with any real business proposal. Two key conditions for participation are that the proposal be either a manufacturing idea or an internationally traded service such as software development, or international financial services. Interdisciplinary teams, ideally three or four students, are encouraged to participate. Professionals from the business world judge the projects, first at regional level, then at a national final which is televised live by Radio Telefis Eireann (the Irish Broadcasting Authority). To date more than 7,000 young people from Irish universities and colleges have submitted business plans for new venture proposals. The 2,000 students (approximately) who participated in the award during the five year period 1984-1989 provided the sample frame for the 1991 study. Table 1 and Table 2 illustrate the main characteristics of the sample of 419 graduates selected for the survey. The 1996 survey tracks this same sample of 419 graduates with the purpose of establishing any differences that occur in the sample over time.

The design of the questionnaire was based on an approach centred on the individual and his/her attitudes and behaviour towards entrepreneurship. The research instrument was composed of a series of dichotomous, scaled and open questions and was developed in four sections containing fifty eight questions and 520 variables in total. The layout and sequence of the questions were designed to facilitate ease of response.

Table 1: Type of Third Level Institution Attended			
Year of Award	**University Students**	**RTC's & Other Colleges**	**Total**

1984	30	25	55
1985	36	45	81
1986	31	41	72
1987	43	47	90
1988	40	81	121
Total	180	239	419
%	43%	57%	100%

Table 2: Characteristics of Sample for 1991 and 1996 Surveys

Year of Award	Business and Commerce	Engineering Science	Total	Male	Female
1984	37	18	55	40	15
1985	55	26	81	59	22
1986	51	21	72	51	21
1987	66	24	90	62	28
1988	69	52	121	82	39
Total	278	141	419	294	125
%	66.5%	33.5%	100%	70%	30%

The first section of the questionnaire was entitled Education and Career to Date. This series of thirteen questions examined the graduate's educational qualifications, his/her career goals and career to date. It also investigated the level of job satisfaction attained and the impact the entrepreneurship course had on the direction his/her career had taken. Areas essential to entrepreneurial success that should have received more emphasis in the entrepreneurship course taken were also considered.

In the second section, Attitudes to Entrepreneurship, thirteen questions were directed at graduates in employment. Graduate attitudes and actions towards starting a business were examined and the factors that discourage or militate against entrepreneurship were reviewed. Details of the respondent's current job situation and involvement in any in-company enterprise activity were also sought, together with figures on the employment size of the company where he/she held their most recent job.

Section three, Business Start-ups, was designed specifically for those graduates who had initiated start-up ventures. In the twenty one questions in this section, the graduate

entrepreneurs were asked about the factors that motivated them to go into business together with information about their company, the support received and the problems they faced. Advice for aspiring entrepreneurs was also sought.

The fourth and final section, Personal and Family Background, focused on personal details. In this last set of eleven questions, the graduate's personal details regarding gender, age and marital status were sought. Parents' occupation, graduates' position in the family and the influence of the family environment were investigated. A concluding question attempted to determine the graduate's career plans for the future. The final open question was designed to gather opinions, suggestions and comments in general with regard to the research and areas of further study. A pilot study was carried out on 5% of the sample. A few minor errors were detected and subsequently corrected. A total of 419 questionnaires were mailed to the survey sample in early 1996 indicating 01 March 1996 as the closing date for data collection.

A total of 91 valid responses were received from the present study whereas 121 valid responses were returned in the 1991 survey. The decrease in the response rate can be attributed to the time lapse that had occurred since the original survey. A number of the questionnaires (5%) were returned unopened as several of the sample surveyed had changed address. The data were coded and results were analysed using an SPSSX computer package. Comparisons with the 1991 results were made and are reported in the following section.

FINDINGS

This first section of the analysis revealed a profile of the respondents' education, employment, career to date and graduates' attitudes toward entrepreneurship programmes.

Table 3: Profile of Respondents

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
University Graduates	65	53.7	56	61.5
Regional Technical and other Institutions	56	46.3	35	38.5
Totals	121	100	91	100

Table 3 presents a profile of respondents by type of third level institution attended. The overall response to the survey by university graduates was 18.7% higher than expected considering the survey sample had a breakdown of 43% (n=180) of university graduates and 57% (n=239) Regional Technical Colleges and other institutions graduates (see Table 1). This calculation is illustrated in Table 4.

An examination of the trends over time indicates that university graduate response increased by 7.8%. The overall higher response rate by university graduates may be attributed to these graduates having a better knowledge and understanding of the value of research and research methodology.

Table 4: Expected Versus Actual Response

	Cohort in 1996					
	Expected		Actual		Difference	
	n	%	n	%	n	%
University Graduates	39	43	56	61.5	+17	18.7
RTCs	52	57	35	38.5	-17	18.7
Total	91	100	91	100		

Overall Table 5 indicates that 64.8% (n=59) of respondents graduated at degree level, 25.3% (n=23) at diploma level and 9.9% (n=9) with a certificate. Little or no change occurred in the type of graduate by qualification who responded to both surveys.

Table 5: Qualifications of Respondents

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Degree	76	62.8	59	64.8
Diploma	30	24.8	23	25.3
Certificate	15	12.4	9	9.9
Totals	121	100	91	100

An examination of the academic specialisms of the respondents shows that in the present survey 65.9% (n=60) of respondents have a business qualification, while 34.1% (n=31) have a science / engineering qualification (Table 6). This response compares favourably to the profile of the total sample outlined in Table 2, business / commerce 66.5% (n=278) and science/ engineering 33.5% (n=141).

Table 6: Specialism of Respondents

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Business / Commerce	89	73.6	60	65.9
Engineering	15	12.4	19	20.8
Science	17	14	12	13.3
Totals	121	100	91	100

Overall 39.5% (n=36) of the respondents opted for further study after obtaining their primary qualification with 11% (n=10) completing a Masters degree and 28.5% (n=26) taking an additional qualification such as an accountancy or graduate diploma course (Table 7). The number of graduates to qualify with a Masters degree has increased by 7% from 4% (n=5) to 11% (n=10) over the past five years. This increase can be expected as several graduates choose work experience before returning to study for a Masters degree.

Table 7: Further Qualifications

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Masters Degree	5	4	10	11
Postgraduate Qualification (excluding Masters)	29	24	26	28.5
Primary Qualification	87	72	55	60.5
Totals	121	100	91	100

In terms of graduates' initial career goals, responses from the sample were many and varied. A closer analysis of the data on respondents' initial career aspirations identified five main responses (Table 8). A short-time goal of employment in their specialism was the objective of 40.2% (n=35) of respondents while 26.4% (n=23) indicated a more long-term view stating that experience, promotion and ultimately a management position was their career aspiration. In total 66.6% (n=58) saw their future in employment. It should be noted that 27.7% (n=24) reported that their career goal was first to gain experience and then move to start their own business.

Table 8: Initial Career Goals		
	Cohort in 1996	
	n	%
Employment in Specialism	35	40.2
Promotion / Management	23	26.4
Experience / Self-Employment	24	27.7
Education / Further Study	2	2.3
Not clear / None	3	3.4
Totals	87	100

The vast majority of respondents 83.6% (n=76) felt that their primary qualification was relevant to the direction their career had taken with 26.4% (n=24) indicating that the qualification was essential to their employment position (Table 9). Six respondents emphasised that their post-graduate qualification was responsible for their current job situation. Several respondents expressed the fact that their qualification was a well recognised practical degree and had opened up opportunities in related areas. Interestingly four respondents reported that the entrepreneurship course directly resulted in their present employment. It should be noted that 16.5% (n=15) of respondents felt that their qualification was of little or no relevance to their career. A criticism put forward by these graduates was that education was useful but that very little practical experience and knowledge of the real world was obtained.

The results outlined in Table 10 are perhaps the most interesting of the study. The number of respondents in self-employment has increased from 5% (n=6) in 1991 to 14.5% (n=13) in 1996. It is accepted that the entrepreneurial employment status is low in comparison with the total sample. The majority of the respondents have selected a career in employment which suggests a strong attitudinal orientation towards employment. Nonetheless the results indicate a positive trend towards entrepreneurship over time. As graduates age, it is anticipated that many more of them will start a business as implied above.

Table 9: Relevance of Qualification to Career to Date		
	Cohort in 1996	
	n	%
Very Relevant	24	26.4
Relevant	28	30.8
Fairly Relevant	24	26.4

Little Relevance	**11**	**12.1**
No Relevance	**4**	**4.3**
Totals	**91**	**100**
Weighted Average Score	**3.63**	

In terms of the number of employment positions held by respondents since graduation, Table 11 indicates that the majority of respondents in the main cohort have held two positions 31.4% (n=28) while 22.4% (n=20) have held three positions. The majority of graduate entrepreneurs 30.8% (n=4) reported three job positions before start-up. The majority of respondents 53% (n=48) cited the identification of a better opportunity or wider experience as their main reason for changing jobs while 15% (n=14) expressed dissatisfaction, frustration and boredom as their reasons for change. To travel, to return to study and because of temporary employment were other reasons stated. The graduate entrepreneurs changed jobs to gain experience in various areas before setting up their own enterprise.

Table 10: Employment Status of Respondents

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Employed	**108**	**89.2**	**76**	**83.3**
Self-Employed	**6**	**5**	**13**	**14.5**
Studying	**5**	**4**	**1**	**1.1**
Unemployed	**2**	**1.8**	**1**	**1.1**
Totals	**121**	**100**	**91**	**100**

Table 11: Number of Employment Positions since Graduation

	Cohort in 1996		Entrepreneurs in 1996	
Number of Positions	**n**	**%**	**n**	**%**
One	**14**	**15.8**	**2**	**15.3**
Two	**28**	**31.4**	**2**	**15.3**
Three	**20**	**22.4**	**4**	**30.8**
Four	**13**	**14.6**	**3**	**23.3**

Five	7	7.9	2	15.3
Six +	7	7.9	-	-
Totals	89	100	13	100

Respondents were asked to indicate the size of the firm in which they were employed (Table 12). An interesting finding was that one third 33% (n=30) worked in the small firm sector in companies with less than 50 employees. This finding supports recent research which indicates that the main job opportunities are occuring in the small firm (Hart et al. 1993). Those in employment were questioned regarding their involvement with in-company enterprise activity, 45% (n=35) responded positively. The type of entrepreneurial work cited was new product development, research and development, market research and new project initiatives. It can be concluded that a considerable number of the respondents are engaged in entrepreneurial endeavours in their place of employment.

Table 12: Employment and Enterprise

	Cohort in 1996	
	n	%
Employed in company with less than 50 employees	30	33
Employed in company with more than 50 employees	57	62.6
Not Applicable	4	4.4
Totals	91	100

When questioned about their satisfaction with their career to date, little or no change appears to have occurred over time. Table 13 suggests that a substantial majority of respondents 71.4% (n=65) are satisfied or very satisfied with the direction their career has taken. It is interesting to note that on isolating the responses of the 13 graduate entrepreneurs, an extremely high level of career satisfaction is reported, 4.30 v 3.97 weighted average score. It is suggested that the overall high level of career satisfaction in the main sample who responded may be attributable to the possibility that within the group are a number of future entrepreneurs comfortable in the knowledge that they are gaining the maturity and experience necessary to reach their ultimate goal of self-employment. The results also indicate that 28.6% (n=26) of respondents are less than satisfied with expectations of career direction and status not being met.

Table 13: Satisfaction with Career to Date						
	Cohort in 1991		Cohort in 1996		Entrepreneurs in 1996	
	n	%	n	%	n	%
Very Satisfied	34	36.2	28	30.8	6	46.1
Satisfied	42	44.7	37	40.6	5	38.5
Fairly Satisfied	5	5.3	22	24.2	2	15.4
Dissatisfied	9	9.6	3	3.3	-	-
Very Dissatisfied	4	4.2	1	1.1	-	-
Totals	94	100	91	100	13	100
Weighted Average	3.99		3.97		4.30	

In order to explore in more detail respondents' satisfaction with their career to date and current work position, a choice of five alternative job situations was offered, as outlined in Table 14. The sample were asked, to select their preferred option. The results indicate that 34.8% (n=31) selected their current job as their preferred choice. This figure includes all 100% (n=13) of the graduate entrepreneurs.

For those in employment, 20.2% (n=18) opted for their present job but with some changes in their working environment, while 25.8% (n=23) indicated that a similar job in an enterprise of their own was their number one choice. Overall a total of 42.7% (n=38) preferred a career in employment, while the majority 57.3% (n=51) considered entrepreneurship and a business of their own as their first career choice.

Whether the undergraduate enterprise initiative taken by the sample had an effect on graduates' subsequent career decision was also explored (Table 15). While the majority of respondents 66.3% (n=55) stated there was 'little' or 'no effect', a reasonably high proportion 33.7% (n=28) responded positively with 3.6% (n=4) stating that the entrepreneurship course had a 'very important effect' on their career choice. It should be noted that the graduate entrepreneurs' response had a substantially higher weighted average score 3.38 v 2.30, indicating that the entrepreneurship course had influenced their career decision. An examination of the results suggests that as the cohort matured the significance of their exposure to entrepreneurship at college diminished with time.

Table 14: Choice of Current Work Position				
	Cohort in 1996		Entrepreneurs in 1996	
	n	%	n	%

The job you have now (whether you are employed or self employed)	31	34.8	13	100
The same kind of work but with some changes in working conditions or people you work with	18	20.2		
The same kind of work but in an enterprise of your own (for those in employment)	23	25.8		
A different kind of work entirely in an enterprise of your own	15	16.8		
A different kind of work entirely but not in an enterprise of your own	2	2.2		
Totals	89	100	13	100

Respondents were asked to indicate if there were any areas of study relating to entrepreneurship where more emphasis was needed in the curriculum at the undergraduate level. Overall a very high proportion of the sample 80% (n=73) replied in the affirmative feeling these courses could be improved. Two key areas were identified, information technology and finance. Other suggestions included more emphasis on marketing and selling techniques, leadership and human relations, languages, negotiation and presentations, government regulations and more practical experience.

While the first section of the findings in this paper established graduates' education, employment status and their perceptions and views with regard to their career and entrepreneurship course, the next section explored the attitudes and behaviour of graduates in employment towards starting a business. It also examined the factors which respondents felt discourage entry into entrepreneurship.

Table 15: Effect of Entrepreneurship Course on Career Decision

	Cohort in 1991		Cohort in 1996		Entrepreneurs in 1996	
	n	%	n	%	n	%
Very Important Effect	8	10.8	3	3.6	4	30.7
Important Effect	13	17.6	11	13.3	4	30.7
Fairly Important Effect	12	16.2	14	16.8	1	7.6
Little Effect	26	35.1	35	42.2	1	7.6
No Effect	15	20.3	20	24.1	3	23.4

Totals	**74**	**100**	**83**	**100**	**13**	**100**
Weighted Average	**2.63**		**2.30**		**3.38**	

Respondents in employment were asked their attitude towards the probability that they would start a business at a future date. Table 16 provides a summary of their responses. A high proportion 51.3% (n=39) felt its was 'highly probable' or 'probable' that they would establish a new venture. It is interesting to note that the feelings and motivations of respondents towards business ownership have not changed over a five year period and indeed remain exactly the same today. When asked if they had a business idea, 64% (n=50) of the respondents responded positively.

Table 16: Probability of Running Own Business

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Highly Probable	27	25.2	19	25
Probable	28	26.2	20	26.3
Some Probability	36	33.6	24	31.5
Improbable	12	11.3	12	15.8
No Probability	4	3.7	1	1.4
Totals	107	100	76	100
Weighted Average Score	3.58		3.58	

Continuing with the exploration of respondents in employment aspirations towards entrepreneurship, the next question was directed at establishing if any of the sample were, in fact, actively seeking a business opportunity. The objective was to identify if a change had occurred in the samples' behaviour either toward or away from business start-up. The results in Table 17 show a very slight move towards entrepreneurship with the weighted average score of the responses moving from 2.46 to 2.57. The findings indicate that a considerable number of the cohort 51.3% (n=39) are alert to business opportunities that may occur.

Table 17: Actively Seeking Business Opportunity

	Cohort in 1991		Cohort in 1996	
	n	%	n	%

Very Large Extent	6	5.6	4	5.3
Large Extent	13	12.1	8	10.5
Some Extent	31	29	27	35.5
Little Extent	36	29	25	32.9
No Extent	21	24.3	12	15.8
Totals	107	100	76	100
Weighted Average Score	2.46		2.57	

Another finding of the survey was that no change had occurred in the number of respondents who ran a business on a part-time basis compared to five years ago (Table 18). The figure remains stable at just over 15% (n=12) of the sample. The majority of the part-time business activities were in the service sector and included areas such as consultancy, education, computer/software systems, tourism and property management. Studies of new venture creation reveal that entrepreneurship is a process which allows many variations of a potential venture. The phenomenon labelled the Corridor Principle, proffers that most entrepreneurs will see corridors leading to new venture opportunities (Ronstadt, 1985). Starting a business on a part-time basis suggests that these respondents may well be aspiring entrepreneurs.

Table 18: Running a Business on a Part-Time Basis

	Cohort in 1991		Cohort in 1996	
	n	%	n	%
Run a Business Part-time	14	15.3	12	15.8
Do not run a Business Part-time	77	84.7	64	84.2
Totals	91	100	76	100

Considering the constraints facing graduates who aspire to self-employment, the graduates who were in employment were asked what were the factors they believed militated against entrepreneurship. Respondents were asked to reply on a five point scale their perception of the criteria that hinder or discourage entrepreneurship. Table 19 summarises the weighted average scores of the responses. An examination of the results indicates that the importance of job security and lack of perceived opportunity has increased somewhat while change in attitude toward the risk involved has increased quite substantially from a 2.95 weighted average score to 3.45. The constraints of family responsibility have also increased to some degree whereas the issue of finance and experience remain relatively stable. The findings suggest that as graduates mature they become more risk averse.

Table 19: Factors Militating Against Entrepreneurship		
	Weighted Average Score	
	Cohort in 1991	Cohort in 1996
Importance of Job Security	3.09	3.64
Lack of Perceived Opportunity	3.13	3.71
Lack of Finance	3.79	3.78
Lack of Relevant Experience	3.41	3.14
Perceived Risk too High	2.95	3.45
Constraint of Family Responsibilities	1.75	2.13

This section of the paper provides information on the business ventures initiated by graduate entrepreneurs. It examines the type of business started, the operating details of the business and the factors that encouraged respondents to start their ventures. Some personal and family details are also presented and projections of graduate entrepreneurs' future career plans are outlined.

Table 20 reveals the number and type of businesses initiated by the graduate entrepreneurs. Although the figures are small, the number of graduate entrepreneurs who responded to the survey has increased over a five year period from 5% to 14.5%, an increase of 9.5%. It should be noted that only one entrepreneur from the original survey replied to the 1996 survey. It has to be assumed that some or all of the other five businesses may no longer exist. The findings indicate that the electronics/software industry is the sector that has offered the greatest opportunities, followed by the financial services sector, with manufacturing/ engineering third. An examination of the mean distributions of the group with respect to operating details suggests an increase in turnover and salary, with a slight reduction in the number of people employed and the length of time in business.

Table 20: Type of Business Start-Ups				
	Entrepreneurs in 1991		Entrepreneurs in 1996	
Sector	n	%	n	%
Electronics / Software	1	16.7	5	38.4
Financial Services	1	16.7	3	23.1
Manufacturing / Engineering	1	16.7	2	15.4
Exporting (Agri-Business)			1	7.7

Photography (Industrial)	1	16.7	1	7.7
Entertainment			1	7.7
Consultant	1	16.6		
Property	1	16.6		
Totals	6	100	13	100
Trading Internationally	2		2	
Average Employees	9.5		8.8	
Average Turnover p.a.	£540,000		£795,000	
Average Salary	£15,000		£29,000	
No. of years in Business	2.5 years		2.0 years	

Respondents who had established their own enterprise were asked to rank on a five point scale the factors which prompted their decision to become entrepreneurs. Table 21 presents the weighted average scores of the responses. The most obvious finding is that the perception of a suitable business opportunity represented the most important factor for respondents with no change occurring in their attitude to this fact over time. Particularly interesting was the response of the graduate entrepreneurs to the entrepreneurship course taken at college. The findings suggest that over time the impact and the importance of the course is less evident. This result could be anticipated as the clarity of an event in individual's memory diminishes with time. It is interesting to note the increase in the variable 'discovery of a partner' from 2.33 weighted average score to 3.53. An analysis of the number of graduate entrepreneurs who started their business with a partner indicates that the vast majority 92.3% (n=12) did so. The availability of finance also appears to be a factor of increased importance.

Table 21: Factors that Encouraged Entrepreneurs to Start Business

	Weighted Average Score	
	Entrepreneurs in 1991	Entrepreneurs in 1996
Perceived suitable opportunity	4.16	4.15
Entrepreneurship Course	3.98	2.92
Frustration with existing job	2.83	2.76
Low perceived risk	2.50	2.76
Availability of finance	2.83	3.38
Discovery of partner	2.33	3.53

Influence of Parents / Role Models	**2.71**	**2.69**

Table 22: Personal Details of Graduate Entrepreneurs

		Entrepreneurs in 1991		Entrepreneurs in 1996	
		n	%	n	%
Sex of Respondents:	Male	5	83.3	11	84.6
	Female	1	16.7	2	15.4
	Totals	6	100	13	100
Mean Age of Respondents at Start-Up		25.3 years		28 years	
Marital Status:	Married	2	33.4	7	53.9
	Single	4	66.6	6	46.1
	Totals	6	100	13	100
Rank in Family:	First Born	2	33.4	5	38.4
	Second Born	1	16.6	4	30.6
	Third Born	1	16.6	3	23.0
	Other	2	33.4	1	8.0
	Totals	6	100	13	100

In terms of personal variables graduate entrepreneurs were predominantly male. The age of the respondents at start-up had increased from 25.3 years to 28 years and a higher proportion of the sample were married as can be expected. Interestingly the number of graduate entrepreneurs who were first born remained fairly consistent with 33.4% (n=2) of the group in 1991 and 38.4% (n=5) in 1996 (Table 22).

Research indicates that a high percentage of entrepreneurs are from homes where the parent or parents are self-employed (Cooper and Dunkelberg, 1987). Table 23 illustrates the number of graduate entrepreneurs with self-employed parents. Several of the respondents also had brothers and sisters who were running their own businesses. Scherer et al. (1991) in their study of entrepreneurs with parent entrepreneurs concluded that individuals who have observed a parent role model, develop a profile in which personality and the preference for an entrepreneurial career are seen as complementary.

Table 23: Graduate Entrepreneurs Parents Self-Employed

		Entrepreneurs in 1991		Entrepreneurs in 1996	
		n	%	n	%
Father Self Employed:	Yes	5	83.3	9	69.2
	No	1	16.7	4	30.8
	Totals	6	100	13	100
Mother Self Employed:	Yes	2	33.4	4	30.8
	No	4	66.6	9	69.2
	Totals	6	100	13	100

Table 24 indicates that the vast majority of the entrepreneurs were university graduates, specialised in business/commerce and held a degree qualification. Three of the respondents had achieved a Masters degree with four others holding an additional qualification.

The concluding questions to the graduate entrepreneurs attempted to determine their motivation for starting a business, the problems they encountered, their advice to aspiring entrepreneurs, and finally their future career plans were sought. Five of the respondents stated that financial reward was their main motivation while three respondents cited frustration with their existing employment. Profitable opportunities, independence, self-expression, ambition and parental influence were also contributing factors. The biggest problem encountered was dealing with banks and bureaucratic institutions, who some of the respondents felt were more of a hindrance than a help. Gaining acceptance in the market, trusting other people too much, workload, responsibility, understanding and preparing financial statements and government returns were also reported as problem areas.

Table 24: Qualifications of Graduate Entrepreneurs

	Entrepreneurs in 1991		Entrepreneurs in 1996	
	n	%	n	%
University Graduates	3	50	9	69.2
RTC and other Institutions	3	50	4	30.8
Totals	6	100	13	100
Business / Commerce	4	66.6	9	69.2
Science / Engineering	2	33.4	4	30.8
Totals	6	100	13	100

Degree	**3**	**50**	**9**	**69.2**
Diploma	**1**	**16.6**	**3**	**23.1**
Certificate	**2**	**33.4**	**1**	**7.7**
Totals	**6**	**100**	**13**	**100**

Advice to aspiring entrepreneurs included; be independent; go for it; get experience; learn from everyone; keep an eye out for opportunities; do market research; find customers; don't be afraid of failure; overestimate expenses and underestimate sales. Finally, all the graduate entrepreneurs stated that their career plan was to expand the business. To develop globally, to buy another company, to sell an existing one and start all over again were the additional aspirations of three of the graduate entrepreneurs.

DISCUSSION AND CONCLUSIONS

The need for research into the area of entrepreneurship education and graduate entrepreneurship is well documented (Vesper, 1985; Rosa and McAlpine, 1991). Questions which currently surface are; can entrepreneurship be taught? Why should anyone choose to undertake the risks, financial burden and general disruption to social life which setting up and running one's own business entails? In particular, why should a graduate with a variety of career options open to him/her make this choice? These are some of the questions addressed in this paper.

The resolve to carry out this study evolved from the belief that entrepreneurship initiatives and programmes introduced during third level education stimulate entrepreneurship. The tentative evidence from this study suggests that this hypothesis is well-founded. Sexton and Bowman-Upton (1988) contend that the effectiveness of an entrepreneurship course lies in the number of graduates that participate in an entrepreneurial endeavour and this determination of effectiveness lies in a longitudinal study. The study shows that the majority of the respondents to date have chosen a career in employment. However, there is evidence that the enterprise initiative taken by the cohort had an effect on the graduates' subsequent career aspirations and for over a third of the sample influenced in some way their career decision. The most important trend emerging from the longitudinal study is that as graduates mature, the proportion entering business ownership increases. Within ten years of leaving a third level institution, one in fifteen graduates were running their own business and report a considerably high level of career satisfaction. It is interesting to note

that fifty seven percent of respondents selected self-employment as their first career choice given the opportunity.

Graduate Entrepreneurs have found business opportunities mainly in the electronics/software and financial services sectors. They have an average of nine employees and an annual turnover of approximately three quarters of a million pounds. The evidence suggests that they are predominantly male, start their businesses at 28 years of age, have a business qualification and over half have self-employed parents. Their motivation for starting a business was the identification of a feasible business opportunity, the discovery of a suitable partner and the anticipation of the financial reward to be gained. An interesting finding that emerged from the study is that a considerable proportion of respondents, thirty three percent, are employed in a company with less than 50 employees. This result should be considered in the design of university and college curricula which up to recently has almost entirely focused on the large company.

For those in employment over half indicated that they were actively seeking a business opportunity and that it was probable that at some future point in their career they would set up their own business. In fact fifteen per cent were already running a business on a part-time basis. Obstacles to business entry were perceived as lack of business opportunities, the job security of employment, the risk involved and the finance required, the relevant experience needed and the constraint of family responsibilities. Interestingly, the study indicates that over time graduates become increasingly more risk averse. It can be argued that many of the respondents who presently perceive obstacles preventing business ownership may view their position in a more favourable light in the years to come. Employment in established organisations may be temporary allowing the graduates to gain experience and financial resources necessary to start their own business. Thus, the possibility exists that many individuals who preclude business ownership today may be the entrepreneurs of tomorrow.

In conclusion, from the evidence of this longitudinal study it appears that creating an awareness of the entrepreneurship process and developing and transferring knowledge about business formation during higher education can indeed stimulate graduate entrepreneurship.

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ENTREPRENEURS AS EXPRESSED IN COLLOCATIONS AN EXPLORATORY STUDY

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ABSTRACT

The purpose of this paper is to define more exactly what the term `entrepreneur´ means to Finnish people, and at the same time to give information regarding what people really think about entrepreneurs. This is done by combining the ideas of entrepreneurship and linguistics in an innovative way. The study is based on collocation analysis. Collocation is the co-occurrence of two or more words within a short space of each other. These frequent word combinations are close to idiomatic expressions and are integral parts of our everyday language. In fact, the dictionary definitions of words are, to an extent, based on collocational restriction patterns. Thus, they enable us to define more exactly what the term `entrepreneur´ means to people. This is especially helpful since according to some of today´s leading researchers of entrepreneurship the term is often applied to too many things that people want to glorify. In fact, over time the term has shifted in the popular view from being somewhat pejorative to being complementary.

With the help of suggested collocative word pairs and a narrative text that took up the different aspects of being an entrepreneur, we explored the primary meanings of that term in different contexts. In the quantitative analysis of the linguistic data, the typical adjective-noun collocations describing entrepreneurs were discovered with the help of multiple analysis of co-occurrence. In the qualitative analysis, the results helped us to create semantic fields describing the common use of the word `entrepreneur´. It was found that currently the term `entrepreneur´ covers a wide variety of different and even somewhat contradictory meanings. It was also discovered that the behaviours and mind sets of entrepreneurs are complex issues. This, in turn, implies that entrepreneurship can not yet be defined as a rigid paradigm. Instead, it is a discipline that is constantly fine-tuning its focus of interest. Finally, collocational studies may turn out to be a useful method for future research regarding, for instance, entrepreneurship education.

INTRODUCTION AND STUDY PROBLEMS

This study constitutes a preliminary effort in trying to combine the ideas of linguistics and entrepreneurship to gain fresh insights into the way people perceive entrepreneurs. As far as we know, nobody has ever before studied entrepreneurs with a collocational analysis. Of course, empirical collocational studies have been made earlier (e.g., Lipka, 1992; Bolinger, 1986; Leech, 1975, etc.), but usually in the field of linguistics.

J.R. Firth (1957, 197) introduced the notion of collocation as part of his overall theory of meaning. It is at the collocational level of analysis, intermediate between the situational and the grammatical, that he proposes to deal with lexical meaning: i.e., with that part of the meaning of words which depends upon their tendency to co-occur in texts. More particularly, Firth (1968, 179) later argued: "You shall know a word by the company it keeps" and this "keeping company" he called collocation and considered it a significant part of the word´s meaning. His familiar example was that of *ass* which occurred in *You silly -*, *Don´t be such an -* and with a limited set of adjectives such as *silly, obstinate, stupid, awful* and *egregious*. Similarly, he wrote, for example, that "one of the meanings of *night* is clearly its frequent co-occurrence or collocation with *dark*"

The authors of this study have earlier used a metaphor analysis method in order to study how various people perceive entrepreneurs and entrepreneurship (see Koiranen, 1995; Koiranen & Peltonen, 1995; Hisrich, Koiranen & Hyrsky, 1996). We found that metaphorical expressions were sometimes much better than literal statements in revealing what (and how) people really think about entrepreneurship; they are vehicles through which we can construct our realities. Encouraged by the versatility and usability of linguistic approaches, we have now left aside metaphors and replaced them with collocations.

We hold the view that entrepreneurs and entrepreneurship should be studied with an operationalized approach where everyday language in general and collocations in particular are used. The main focus of the paper is to explore the meanings of ´an entrepreneur´ in different contexts. More particularly, we set out to investigate what kind of collocative adjectives and nouns (in pairs) the respondents use when they are describing the attitudes, behaviours and characteristics of typical entrepreneurs. In this way, the present study also tries to come up with collocations, or in simpler language, frequent word combinations, that may enable us to define more exactly what the term ´entrepreneur´ means to Finnish people. This is due to the fact that the definitions of meanings of lexical items are to a large extent determined by the collocational patterns of these items (Bäcklund, 1981, 5; Sinclair, 1991, 110). For example, the dictionary definitions of words are more or less based on these patterns of collocational restrictions.

All this is related to the situation arising, at least in Finland, where the definition of the terms `entrepreneurship´ and `entrepreneur´seem to cover increasingly wider ground of different meanings. This is resulting in a situation where some of the primary and secondary meanings of these terms are perhaps gradually changing while reflecting the present, more positive socioeconomic climate towards entrepreneurial activity in Finland.

LITERATURE REVIEW

Bolinger (1986, 78) shows how adjectives very often form collocations with the noun: the adjective in the noun phrase names a quality that is frequently associated with the noun, and often appears along with the noun in cases of what the linguist J.P. Maher calls `salient feature copying´:

stubborn ox	**proud father**
scared rabbit	**dirty tramp**
flighty girl	**dumb broad**
irresponsible child	**lazy foreigner**

In the same way, Leech (1975, 20) argues that collocative meaning consists of the associations a word acquires on account of the meanings of words which tend to occur in its environment. *Pretty* and *handsome* share common ground in the meaning `good-looking´, but may be distinguished by the range of nouns with which they are likely to co-occur or (to use the linguist´s term) collocate:

pretty	**girl, boy, woman, flower, garden, colour, village, etc.**
handsome	**boy, woman, car, vessel, overcoat, airliner, typewriter, etc.**

The ranges may well, of course, overlap: *handsome woman* and *pretty woman* are both acceptable, although they suggest a different kind of attractiveness because of the collocative associations of the two adjectives. Further examples are quasi-synonymous verbs such as *wander* and *stroll* (*cows* may *wonder*, but may not *stroll)* or *tremble* and *quiver* (one *trembles* with *fear,* but *quivers* with *excitement*). Cruse (1986) clarifies this when he suggests that the

constituent elements of collocations are, to an extent, mutually selective; the constituents have a kind of semantic cohesion that binds them together.

It is obvious that by looking at the linguistic context of a word, we can often distinguish between different meanings. Nida (1964, 98), for instance, discussed the use of *chair* in:

sat in a chair	**will chair the meeting**
the baby´s high chair	**the electric chair**
the chair of philosophy	**condemned to the chair**
has accepted a University chair	

These are clearly in pairs, giving four different meanings of the word. But this does not so much establish, as illustrate, differences of meaning. Dictionaries, especially the larger ones, quite rightly make considerable use of this kind of contextualization (Palmer, 1983, 76). In lexicography, there are three useful technical terms in the description of a collocation: the node or node word, its collocates and span. For instance, in the above example, *chair* is called the node word in a collocation, whereas the other elements in the expressions are the collocates for *chair*. Thus, the node word in a collocation is the one whose lexical behaviour is primarily under examination. The node words are, in fact, the core vocabulary items of English. A collocate is a word which occurs in close proximity to the word under investigation. The usual measure of proximity is a maximum of four words intervening. Finally, the collocates can be counted and this measurement is called the span.

Palmer (1983, 76) argues that collocation is not simply a matter of association of ideas. For although *milk is white*, we should not often say *white milk*, though the expression *white paint* is common enough. Although collocation is very largely determined by meaning, it is sometimes fairly idiosyncratic and cannot easily be predicted in terms of the meanings of the associated words. One example is blond hair. We should not talk about *a blond door* or *a blond dress*, even if the colour is exactly that of blond hair. The term collocation is also neutral with respect to which element is primary or dominant in the relation, for instance, in a noun phrase it can be the noun or the adjective.

Meanwhile, Liepka (1992, 166) thinks that the concept of collocation, which plays an important role in British linguistics, where it originated, is neutral in several respects. The term designates the co-occurrence of lexical items, independently of word class and syntactic structure. Liepka (1992, 167) carried out an empirical study with the help of a restricted number of native speaker informants: two English, two Scottish and two American. As a result, *male* was found to collocate most frequently with *choir, child, nurse, animal* and

masculine **with** ***style, woman, pronoun.*** **The judgment and elicitation tests also yielded some other collocations:** ***electric light*** **(shock, chair), but** ***electrical engineer*** **(engineering, appliance, industry). It seems that such collocations must be learnt as complete expressions, which are automatically triggered and reproduced.**

In another collocation study, Church and Hanks (1990) examined the words which would most frequently collocate with the verb ***save*****. Their research sample consisted of a massive file of news text including 44 million words drawn up by the Associated Press news agency. They focused on the words that immediately followed the term** ***save*** **in this enormous passage of text running on a computer screen. Church and Hanks (1990) found the following:**

save: forests, lives, enormous, annually, jobs, money, life, dollars, costs, thousands, face, son, estimated, your, billion, million, us, less, from

With the help of studies like these it becomes possible to gain valuable empirical information regarding the contexts in which the word tends to appear. Through their analyses of the collocations, Church and Hanks (1990) found for instance, that nowadays people are very keen to save their money, environment, lives etc. Furthermore, they concluded that the verb save tends to co-occur frequently with the person or object that benefits from the course of action. These and other findings are usually given in the lexical description of the item.

The above method bases the meaning on the context enabling us to narrow down the primary or basic and the different secondary meanings associated with the word. If this approach is taken to its "extreme" form, it enables us to break down the sense of a word into its typical distinctive features and components. On the other hand, it can help to construct different semantic fields and networks that consist of large groups of words that are semantically and conceptually related. For instance, it would be intriguing to investigate the words and expressions constituting the semantic field of ***entrepreneurship*** **in the late 1990s.**

METHODOLOGY AND SAMPLE

In the present study some 120 Finnish respondents from different backgrounds were asked to fill in pairs of adjectives and nouns to create a text corresponding to their way of thinking and feeling about entrepreneurs. Based on their preferences, they were able to select from 30 suggested adjectives and 30 suggested nouns to complete the one-page narrative text on entrepreneurs. The text is displayed in Appendix A. The adjectives and nouns were, in part, derived from an earlier instrument developed by Koiranen and Peltonen (1995) on the

relatedness of the entrepreneurial concepts. The adjectives and nouns are displayed in Appendix B. In this way, the respondents created some 30 noun phrases including collocations and pairs of words that at least collocate, i.e., occur regularly whenever the other word is used.

More than 50 per cent of respondents were students of entrepreneurship, aged 20-22, which suggests that the results of the study primarily reflect the attitudes and mental set of potential entrepreneurs. The rest of the sample consisted of a cross-section of people from different backgrounds, most between ages 25 and 30. About 52 percent of the respondents were female and 48% male. Approximately 87 percent of the subjects had some kind of work experience and 20% had direct experience in running their own company as an entrepreneur, a small business owner or -manager. Most of the respondents were living in Central Finland.

RESULTS

In the statistical analysis of the linguistic data, the aim was to find out the frequency of co-occurrence of the collocates with the node words in the collocations (i.e., adjective-noun collocations). This was achieved by employing an analysis of simple as well as multiple frequencies of co-occurrence. Following is a frequency listing of the most common collocations of *entrepreneur* which appeared in the text completion exercise. Alongside each collocate, in this case the adjective that appears to the left in the word pairs (a), is its frequency of co-occurrence with the node word, i.e., the noun that appears to the right in the word pairs (b). Also, the frequency of the node word (noun) is given in brackets.

Adjective-Noun Collocations of Entrepreneur in English

1a: ***Industrious*** **(22%),** ***persistent*** **(18%),** ***determined*** **(18%),** ***creative*** **(12%),** ***self-directed*** **(11%)**

1b: ***Opportunist*** **(18%),** ***professional*** **(17%),** ***toiler*** **(14%),** ***risk-taker*** **(9%)**

2a: ***Industrious*** **(23%),** ***persistent*** **(18%),** ***self-directed*** **(13%),** ***determined*** **(11%)**

2b: ***Toiler*** **(16%),** ***fighter*** **(14%),** ***developer*** **(11%),** ***opportunist*** **(10%)**

3a: ***Creative*** **(12%),** ***innovative*** **(11%),** ***determined*** **(11%),** ***helpful*** **(10%)**

3b: ***Experimenter*** **(11%),** ***developer*** **(9%),** ***fighter*** **(9%),** ***innovator*** **(9%)**

4a: ***Ruthless*** **(50%),** ***shrewd*** **(19%),** ***brave*** **(11%),** ***selfish*** **(4%)**

4b: ***Speculator*** **(44%),** ***gameplayer*** **(24%),** ***pusher*** **(11%),** ***opportunist*** **(7%)**

5a: ***Responsible*** **(25%),** ***cautious*** **(14%),** ***timid*** **(12%)**

5b: ***Builder*** **(14%),** ***toiler*** **(14%),** ***devotee*** **(12%),** ***developer*** **(11%)**

6a: ***Helpful*** **(12%),** ***innovative*** **(11%),** ***determined*** **(9%)**

6b: ***Developer*** **(21%),** ***professional*** **(12%),** ***authority*** **(12%)**

7a: ***Determined*** **(26%),** ***persistent*** **(12%),** ***self-directed*** **(11%)**

7b: ***Growth-seeker*** **(24%),** ***developer*** **(13%),** ***builder*** **(9%),** ***opportunist*** **(9%)**

8a: ***Reluctant*** **(23%),** ***lazy*** **(22%),** ***timid*** **(18%),** ***inefficient*** **(10%)**

8b: ***Whiner*** **(35%),** ***bureaucra*****t (15%),** ***slave*** **(11%)**

9a: ***Industrious*** **(17%),** ***persistent*** **(14%),** ***self-directed*** **(13%)**

9b: ***Toiler*** **(17%),** ***professional*** **(13%),** ***fighter*** **(12%),** ***workaholic*** **(10%),** ***opportunist*** **(9%)**

10a: ***Responsible*** **(34%),** ***brisk*** **(12%),** ***creativ*****e (10%)**

10b: ***Devotee*** **(31%),** ***builde*****r (19%),** ***actor*** **(14%)**

11a: ***Brave*** **(34%),** ***innovative*** **(18%),** ***creative*** **(15%),** ***experimental*** **(12%)**

11b: ***Opportunist*** **(20%),** ***experimenter*** **(16%),** ***risk-taker*** **(15%)**

12a: ***Persistent*** **(29%),** ***industrious*** **(16%),** ***assertive*** **(13%)**

12b: ***Pioneer*** **(21%),** ***toiler*** **(14%),** ***survivor*** **(12%),** ***fighter*** **(11%)**

13a: ***Determine*****d (17%),** ***brave*** **(10%),** ***hard*** **(10%),** ***experimenta*****l (9%)**

13b: ***Businessman/woman*** **(14%),** ***develope*****r (10%),** ***adventurer*** **(10%)**

14a: ***Innovative*** **(36%),** ***creative*** **(22%),** ***experimental*** **(9%)**

14b: ***Developer*** **(26%),** ***workaholic*** **(13%),** ***experimenter*** **(12%),** ***toiler*** **(12%),** ***innovator*** **(10%)**

15a: ***Efficient*** **(14%),** ***determined*** **(12%),** ***systematic*** **(10%)**

15b: ***Businessman/woman*** **(46%),** ***professional*** **(8%),** ***opportunist*** **(8%)**

16a: ***Creative*** **(29%),** ***innovative*** **(24%),** ***determined*** **(13%),** ***efficient*** **(9%)**

16b: ***Businessman/woman*** **(18%),** ***opportunist*** **(13%),** ***developer*** **(9%)**

17a: ***Conservative*** **(16%),** ***systematic*** **(14%),** ***reluctant*** **(13%),** ***skeptical*** **(12%),** ***ruthless*** **(10%)**

17b: ***Bureaucrat*** **(66%),** ***whiner*** **(7%)**

18a: ***Helpful*** **(78%)** ***brisk*** **(4%)**

18b: ***Professional*** **(55%),** ***actor*** **(15%)**

19a: ***Self-directed*** **(20%),** ***creative*** **(18%),** ***industrious*** **(17%),** ***determined*** **(11%)**

19b: ***Toiler*** **(15%),** ***risk-taker*** **(12%),** ***professional*** **(11%),** ***builder*** **(11%),** ***developer*** **(9%),** ***opportunist*** **(9%)**

20a: ***Determined*** **(18%),** ***self-directed*** **(17%),** ***responsible*** **(15%)**

20b: ***Opportunist*** **(12%),** ***survivor*** **(11%),** ***actor*** **(10%),** ***professional*** **(9%)**

21a: ***Self-directed*** **(21%),** ***persistent*** **(16%),** ***determined*** **(10%),** ***industrious*** **(9%)**

21b: ***Fighter*** **(14%),** ***survivor*** **(13%),** ***professional*** **(10%)**

22a: ***Resolute*** **(12%),** ***efficient*** **(12%),** ***determined*** **(10%),** ***shrewd*** **(9%)**

22b: ***Survivor*** **(13%),** ***professional*** **(13%),** ***developer*** **(10%),** ***businessman/woman*** **(9%),** ***fighter*** **(9%),** ***innovator*** **(9%)**

23a: ***Reformative*** **(33%),** ***experimental*** **(26%),** ***creative*** **(13%),** ***brave*** **(11%)**

23b: ***Developer*** **(17%),** ***risk-taker*** **(13%),** ***innovator*** **(13%),** ***opportunist*** **(12%),** ***experimenter*** **(9%)**

24a: ***Determined*** **(14%),** ***brave*** **(13%),** ***reformative*** **(10%),** ***responsible*** **(9%)**

24b: ***Developer*** **(12%),** ***builder*** **(9%),** ***opportunist*** **(9%),** ***innovator*** **(9%)**

25a: ***Ruthless*** **(42%),** ***shrewd*** **(18%),** ***selfish*** **(13%)**

25b: ***Speculator*** **(23%),** ***pusher*** **(19%),** ***gameplayer*** **(11%),** ***exploiter*** **(11%)**

26a: ***Selfish*** **(37%),** ***ruthless*** **(28%),** ***shrewd*** **(12%)**

26b: ***Exploiter*** **(23%),** ***pusher*** **(25%),** ***speculator*** **(10%),** ***gameplayer*** **(9%)**

27a: ***Industrious*** **(16%),** ***self-directed*** **(12%),** ***determined*** **(12%),** ***creative*** **(10%)**

27b: ***Professional*** **(14%),** ***opportunist*** **(11%),** ***survivor*** **(10%)**

28a: ***Creative*** **(16%),** ***innovative*** **(11%),** ***persistent*** **(11%),** ***assertive*** **(9%),** ***determined*** **(9%)**

28b: ***Opportunist*** **(12%),** ***developer*** **(11%),** ***professional*** **(10%),** ***fighter*** **(9%)**

29a: ***Creative*** **(12%),** ***determined*** **(12%),** ***self-directed*** **(9%),** ***efficient*** **(9%)**

29b: ***Opportunist*** **(11%),** ***builder*** **(10%),** ***risk-taker*** **(10%)**

30a: ***Helpful*** **(13%),** ***creative*** **(12%),** ***determined*** **(12%),** ***systematic*** **(11%),** ***resolute*** **(6%)**

30b: ***Toiler*** **(12%),** ***actor*** **(12%),** ***survivor*** **(10%),** ***opportunist*** **(10%),** ***developer*** **(6%)**

31a: ***Creative*** **(18%),** ***innovative*** **(12%),** ***systematic*** **(8%),** ***determined*** **(7%),** ***self-directed*** **(7%),** ***efficient*** **(7%)**

31b: ***Professional*** **(16%),** ***risk-taker*** **(11%),** ***developer*** **(9%),** ***builder*** **(8%)**

Through an analysis of multiple frequencies of co-occurrence, the following most frequent adjective-noun collocations were discovered. The collocations are displayed in place in the text which formed the base for the survey.

In order to succeed an entrepreneur must be 1a, 1b: *an industrious professional* or at least 2a, 2b: *a persistent fighter*. Compared to the business environment of the 1980s, nowadays she or he must also be 3a, 3b: *a creative experimenter*.

In my view, a so-called speculator as an entrepreneur is 4a, 4b: *a ruthless gameplayer*. The opposite type is 5a, 5b: *a responsible toiler*.

In my hometown the annual achievement award often goes to an entrepreneur who is 6a, 6b: *an innovative developer*. Growth-oriented entrepreneurs are usually 7a,7b: *determined growth-seekers*. In my opinion, you do not succeed as entrepreneur if you are 8a, 8b: *a reluctant whiner*.

A typical small-business owner is 9a, 9b: a *self-directed professional*. On the other hand, running a business together with a team of entrepreneurs is best suited to a personality type who is 10a, 10b: *a responsible devotee.* A person who goes into business with a totally new set of business ideas and company policies should be 11a, 11b: *a brave opportunist.*

My impression is that Henry Ford was 12a, 12b: *a persistent pioneer*. Bill Gates personifies entrepreneurs who are 13a,13b: *determined businessmen*. As an entrepreneur Edison was 14a, 14b: *an innovative developer,* but he died a penniless man. In light of this, one cannot help but arrive at the conclusion that maybe he was not 15a,15b: *an efficient businessman*. Walt Disney struck it rich in his business ventures because he appeared to be 16a, 16b: *a creative opportunist.*

In Finland, the vehicle inspection policies of the not-too-distant past resulted in a bureaucratic administration and services for the clients. In those days, the vehicle inspectors used to be 17a, 17b: *conservative bureaucrats*. However, nowadays, because of the recent privatization process in this field, the situation has begun to change: intrapreneurship has been gaining a foothold in the organizations. Consequently, the inspectors have gradually turned into 18a, 18b: *helpful professionals*.

According to the entrepreneurship education promoted in the Finnish schools, an "ideal" type of personality needed to succeed in the current business environment is 19a, 19b: *a self-directed builder.* This kind of person takes responsibility for her/his own actions regarding, for instance, her/his future in the labour market. She or he achieves this by being 20a, 20b: *a determined opportunist.*

Self-employed persons are typically 21a, 21b: *persistent fighters*. To make sure that their business rivals do not overtake them, they must learn to be 22a, 22b: *resolute survivors*. Meanwhile, innovative business managers are 23a, 23b: *reformative developers*. At the same time, they must also be 24a, 24b: *brave builders*. An entrepreneur accustomed to

cornering is usually 25a, 25b: *a ruthless speculator*. I honestly cannot appreciate an entrepreneur who is clearly 26a, 26b: *a selfish exploiter.*

I look up to entrepreneurs who are 27a, 27b: *self-directed professionals*. This is my view because an ideal entrepreneur should be 28a, 28b: *a creative opportunist* and/or 29a, 29b: *a determined builder.* Personally, as a potential entrepreneur, my personality traits amount to 30a, 30b: *a systematic toiler.* Thus, I am of the opinion that my business partner should be 31a, 31b: *an innovative risk-taker*.

In a qualitative analysis of the collocative word pairs, the following six descriptive categories, i.e., semantic fields of collocations were discovered:

1)	**Empathy and Willingness to Serve** **Examples: *Helpful professional, responsible toiler, cautious thinker,* etc.**
2)	**Hunger to Succeed** **Examples: *Determined survivor, persistent fighter,* etc.**
3)	**Opportunism and Innovativeness** **Examples: *Innovative risk-taker, persistent pioneer, innovative developer, brave/creative builder, brave/creative opportunist, creative experimenter,* etc.**
4)	**Work Commitment and Energy** **Examples: *Industrious professional, systematic/determined toiler, responsible devotee,* etc.**
5)	**Economic Values and Results** **Examples: *Efficient businessman/woman, determined growth-seeker, ruthless speculator, creative builder,* etc.**
6)	**Egoistic and Non-Entrepreneurial Features** **Examples: *Ruthless speculator/exploiter, selfish businessman/woman, lazy whiner, inefficient/conservative bureaucrat, reluctant whiner, selfish exploiter,* etc.**

DISCUSSION

This exploratory study has produced some interesting results in an area previously having no research attention. The results seem to suggest that the term ´entrepreneur´, at least in Finnish, nowadays covers an increasingly wide range of primary and secondary meanings

that are somewhat contradictory. This, in turn, implies that the research of the behaviour and mental set of entrepreneurs comprises a vast field of interest and is, on a closer inspection, a very multi-faceted and complex phenomenon. On the other hand, this may show that, luckily, entrepreneurship can not yet be defined as a rigid ´paradigm´, but instead it is an issue that is constantly fine-tuning its focus of interest as if in the spirit of the deregulated market forces that it tends to reflect.

Entrepreneurship has been widely studied by people with different backgrounds: economists, organization theorists, psychologists, sociologists, etc. Our approach here was derived from linguistics. Bearing in mind the exploratory nature of our study, we are cautious in expressing strong conclusions and in suggesting implications. Due to sample limitations, we are even more cautious in generalizing our results. To the extent our findings are projectable, the study could have implications for entrepreneurship education and future research. We do not hesitate to suggest that our collocational method is more general than our findings.

Furthermore, we think that linguistic methods (or at least collocational and metaphorical analysis) can create new schemes and contribute to seeing alternative opportunities. They can be used as tools to make sense, to structure, and to understand how people think and speak. We hope that in the future they can open some new paradigms for entrepreneurial research. As Lakoff and Johnson (1980, 4-5) argued: "most of our conceptual system is metaphorical in nature". They showed that we perceive and think through metaphors. In other words, as Lakoff and Johnson put it: "we use metaphors in understanding and experiencing one kind in terms of another". After this study, we are encouraged to think that not only metaphors but also collocations can be used in entrepreneurial studies to create understanding and to experience people´s perceptions; as Firth (1968, 179) argued: "You shall know a word by the company it keeps." In conclusion, through our collocational analysis we have gained some fresh insights into the conceptualization and interpretation of that interesting gesture called "an entrepreneur".

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APPENDIX A

The Text, Translated from Finnish, Forming the Base of the Survey

In order to succeed an entrepreneur must be 1a, 1b:

or at least 2a, 2b:

Compared to the business environment of the 1980s, nowadays she or he must also be 3a, 3b:

In my view, a so-called speculator as an entrepreneur is 4a, 4b:

The opposite type is 5a, 5b:

In my hometown the annual achievement award often goes to an entrepreneur who is 6a, 6b:

Growth-oriented entrepreneurs are usually 7a,7b:

In my opinion, you do not succeed as entrepreneur if you are 8a, 8b:

A typical small-business owner is 9a, 9b:

On the other hand, running a business together with a team of entrepreneurs is best suited to a personality type who is 10a, 10b:

A person who goes into business with a totally new set of business ideas and company policies should be 11a, 11b:

My impression is that Henry Ford was 12a, 12b:

Bill Gates personifies entrepreneurs who are 13a, 13b:

As an entrepreneur Edison was 14a, 14b:

but he died a penniless man. In light of this, one cannot help but arrive at the conclusion that maybe he was not 15a,15b:

Walt Disney struck it rich in his business ventures because he appeared to be 16a, 16b:

In Finland, vehicle inspection policies of the recent past resulted in a bureaucratic administration and services for the clients. The vehicle inspectors used to be 17a, 17b:

However, nowadays, because of the recent privatization process in this field, the situation has begun to change: intrapreneurship has been gaining a foothold in the organizations. Consequently, the inspectors have gradually turned into 18a, 18b:

According to the entrepreneurship education promoted in the Finnish schools, an "ideal" type of personality needed to succeed in the current business environment is 19a, 19b:

This kind of person takes responsibility for her/his own actions regarding, for instance, her/his future in the labour market. She or he achieves this by being 20a, 20b:

Self-employed persons are typically 21a, 21b:

To make sure that their business rivals do not overtake them, they must learn to be 22a, 22b:

Meanwhile, innovative business managers are 23a, 23b:

At the same time, they must also be 24a, 24b:

An entrepreneur accustomed to cornering is usually 25a, 25b:

I honestly cannot appreciate an entrepreneur who is clearly 26a, 26b:

I look up to entrepreneurs who are 27a, 27b:

This is my view because an ideal entrepreneur should be 28a, 28b:

and/or 29a, 29b:

Personally, as a potential entrepreneur, my personality traits amount to 30a, 30b:

Thus, I am of the opinion that my business partner should be 31a, 31b:

APPENDIX B

Entrepreneurship Adjectives and Nouns Tranlated from Finnish

To fill in the [a]-blanks in the text, please choose between the following adjectives. You should always select one that in your view best fits into the provided lexical context:

1) *industrious,* 2) *timid,* 3) *skeptical,* 4) *reluctant,* 5) *sensitive,* 6) *unsuspecting,* 7) *ruthless,* 8) *selfish,* 9) *assertive,* 10) *systematic,* 11) *innovative,* 12) *experimental,* 13) *hard,* 14) *lazy,* 15) *persistent,* 16) *creative,* 17) *determined,* 18) *self-directed,* 19) *helpful,* 20) *brisk,* 21) *brave,* 22) *energetic,* 23) *efficient,* 24) *inefficient,* 25) *responsible,* 26) *conservative,* 27) *cautious,* 28) *shrewd,* 29) *resolute,* 30) *reformative*

To fill in the [b]-blanks in the text, please choose between the following nouns. You should always select the one that in your view best fits into the provided lexical context:

1) *toiler,* 2) *professional,* 3) *bureaucrat,* 4) *seeker,* 5) *leader,* 6) *developer,* 7) *speculator,* 8) *experimenter,* 9) *growth-seeker,* 10) *businesswoman/man,* 11) *whiner,* 12) *owner,* 13) *slave,* 14) *bully,* 15) *gameplayer,* 16) *thinker,* 17) *pusher,* 18) *pioneer,* 19) *builder,* 20) *exploiter,* 21) *adventurer,* 22) *survivor,* 23) *devotee,* 24) *fighter,* 25) *opportunist,* 26) *actor,* 27) *workaholic,* 28) *risk-taker,* 29) *innovator,* 30) *authority*