

ENTREPRENEURIAL ACTIVITY, SELF-PERCEPTION AND GENDER
INGRID VERHEUL, LORRAINE UHLANER, A.R. THURIK

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ENTREPRENEURIAL ACTIVITY, SELF-PERCEPTION AND GENDER

Ingrid Verheul

Centre for Advanced Small Business Economics (CASBEC), H8-22,
Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands,
tel. +31 10 4081398/1422, fax. +31 10 4089146, e-mail: verheul@few.eur.nl

Lorraine Uhlaner

Centre for Advanced Small Business Economics (CASBEC), H8-20,
Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands,
tel. +31 10 4081398, fax. +31 10 4089146, and Eastern Michigan University, Ypsilanti MI, USA, e-mail: uhlaner@few.eur.nl

A. Roy Thurik

Centre for Advanced Small Business Economics (CASBEC), H8-24,
Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands,
tel. +31 10 4081398, fax. +31 10 4089146, and EIM Business and Policy Research,
P.O. Box 7001, 2701 AA Zoetermeer, the Netherlands, tel. +31 79 3413634, e-mail:
thurik@few.eur.nl or rth@eim.nl

ABSTRACT

Drawing on Bem's psychological theory of self-perception, this paper presents and tests a model that examines the impact of gender and entrepreneurial activity on entrepreneurial self-perception. Based on a sample of alumni of a large Midwestern U.S. university, regression techniques are used to identify those activities associated with self-perceptions of entrepreneurship, as well as direct and indirect effects of gender. Results support the model of both direct and indirect effects of gender. The paper provides insights into gender issues in entrepreneurship as well as the definition of entrepreneurship in general.

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INTRODUCTION

The research objective of this paper is to seek an answer to the following question: "What determines entrepreneurial self-perception?" In particular, our study aims at creating insight into the impact of gender and entrepreneurial activity on entrepreneurial self-perception, i.e., the extent to which individuals perceive of themselves as entrepreneurs. Because past research has often shown differences in the types of entrepreneurial activities engaged in by men and women, and also differences in the way men and women rate their own and others' managerial activities, gender is included as an important control variable.

From a theoretical perspective, our study is a new application of the well-established psychological theory of self-perception (Bem, 1972) supporting the finding that behavior influences self-perceptions. Our research also provides a fresh answer to the perennial question, "What is an entrepreneur?" using the participants themselves to answer the question. Thus, as seen from a methodological perspective, entrepreneurial self-perceptions are used as the basis for construct validation for a range of behaviors or activities that have variously been described in the research literature as "entrepreneurial".

To sum up, the following research questions are dealt with in this paper:

1. Do entrepreneurial activities influence entrepreneurial self-perception?
2. Is there a separate gender effect?

The present paper is structured as follows. First, we give an overview of behaviors that are classified as entrepreneurial in the literature. Vesper's Entrepreneurial Typology embraces most of these entrepreneurial activities and is the basis for the empirical research. Using Vesper's Entrepreneurial Typology an attempt is made to rank the different entrepreneurial activities according to the degree of entrepreneurship. Subsequently, the concept of (entrepreneurial) self-perception is introduced and its relationship with entrepreneurial activity is investigated. Although it can be argued that there is a two-way relationship between entrepreneurial activity and self-perception the focus in the present paper is on the influence of activity on self-perception. We start from the assumption that certain entrepreneurial activities may be considered more entrepreneurial, i.e., involving a higher degree of entrepreneurship, than others, thereby influencing the self-perception of individuals engaged in different types of

entrepreneurial activity. We also discuss the influence of gender on entrepreneurial activity. At the macro level female and male entrepreneurs appear to differ with respect to the type of entrepreneurial activity they engage in and the way in which they manage this activity. In addition, we look at the influence of gender on self-perception, both indirectly, by way of activities undertaken, and directly. On the basis of the theoretical discussion a model is introduced explaining entrepreneurial self-perception from activity and gender. Hypotheses are formulated for the different influences in the model and are tested in the empirical analysis using a data sample of 186 alumni of a large Midwestern U.S. university. Results are presented and discussed and the paper concludes giving some directions for future research.

DEFINITIONS AND TYPOLOGIES OF ENTREPRENEURSHIP

Definitions of entrepreneurship vary widely (Hébert and Link, 1989; Van Praag, 1999; Lumpkin and Dess, 1996). Kaufmann and Dant (1998) identify the following three classes of definitions: those based on traits or qualities; those based on the role or function of the entrepreneur in the economic process; and those based on the behavior or activities of entrepreneurs. For the purposes of our paper we take the behavioral approach.

Entrepreneurial Behavior or Activities

A wide range of business behaviors have variously been classified in the literature as “entrepreneurial”, including starting up a business, i.e., new venture creation, innovation, business ownership, business growth and size achievement, and managing a large business. In this section we will make a distinction between these different types of entrepreneurial activity.

Early on in the development of the field of entrepreneurship, many scholars propagated the view that new venture creation is at the heart of entrepreneurship (Chandler, 1990; Gartner, 1989, 1985; Low and MacMillan, 1988; McClelland, 1961; Schumpeter, 1934; Vesper, 1980). Two problems many researchers have with this view is that not all new ventures pursue growth (Carland, et al, 1984; Dunkelberg and Cooper, 1982) or innovation (Hornaday, 1992, Schumpeter, 1934), though these two issues are considered by many as added essential components of entrepreneurial behavior. Building on the concept of “newness”, but recognizing the need to view entrepreneurial behavior more broadly, Gartner et al. (1989) argue that most studies of new

venture creation tend to ignore that there are other ways to achieve business ownership than through starting a new business from scratch, such as through the acquisition of an established business. Cooper and Dunkelberg (1986) also distinguish between different paths to business ownership, including starting a new business, purchasing or inheriting a business and being promoted or brought in by existing owners. Building on these notions, Lumpkin and Dess (1996) argue that "the essential act of entrepreneurship is new entry" (p.136) defining new entry as "entering new or established markets with new or existing goods or services". This can be achieved "by starting a business, through an existing business or *internal corporate venturing*" (Lumpkin and Dess, 1996, p. 136). Implicit in this definition of new entry is the notion that entrepreneurship can exist within large businesses. This type of entrepreneurship is often referred to as *corporate entrepreneurship* or *intrapreneurship* where new ideas and responsibilities are implemented in existing, large businesses (Wennekers and Thurik, 1999; Stopford and Baden-Fuller, 1994; and Stevenson and Jarillo, 1990). In this respect "entrepreneurial activities in existing, large firms often take place by mimicking smallness" and "entrepreneurship occurs irrespective of firm size" (Wennekers and Thurik, 1999, p. 33). Other researchers even argue that management of a business is an entrepreneurial activity. According to McClelland (1965) managers can display entrepreneurial behavior in their wage jobs by taking responsibility for their actions and decisions and creatively solve problems. Moreover, Brandstätter (1997) stresses that entrepreneurial behavior is important in all leading positions within the higher level of organizations.

Vesper's Entrepreneurial Typology

Vesper (1999) proposes an entrepreneurial typology, presented in Table 1, embracing a broad range of these themes in entrepreneurial behavior. Vesper does not try to rank these activities, but instead acknowledges that different types of entrepreneurial activity exist side by side (see also Cunningham and Lischeron, 1991). Vesper argues that researchers should adopt a view that separately identifies different types of entrepreneurs rather than solving the conundrum: "What is an entrepreneur"?

Table 1 Vesper's Entrepreneurial Typology

Name/ type	Entrepreneurial activity
Starter	enters an independent business by creating a new one
Acquirer	enters an independent business by acquiring an ongoing concern
Runner	manages a small to medium business beyond start-up
Take-Off Artist	steers a company into a high-growth trajectory
Turnaround Artist	saves a failing company
Innovator	makes something new happen that is not a company
Champion	supports innovator
Intrapreneur	takes initiative for business unit creation inside an established business
Industry Captain	runs a big business

Degree of Entrepreneurship

Although Vesper does not propose his own ranking of the proposed activities, it is plausible that the different types of entrepreneurial activity are perceived to involve different degrees of entrepreneurship, a concept first proposed by Cooper and Dunkelberg (1986). In particular, different behaviors may vary in degree of entrepreneurship depending upon underlying requirements or characteristics, such as opportunity perception (Kirzner, 1979), imagination (Shackle, 1979), creativity (Torrance, 1967), innovation (Schumpeter, 1934), risk-taking (Knight, 1921; Cantillon, 1931), locus of control (Perry, et al, 1986; Rotter, 1966), need for achievement (McClelland, 1961; Perry, et al, 1986), need for autonomy, initiative and persistence.

Of the underlying characteristics, opportunity perception, risk-taking and innovation (as a creative process) are most pervasive in the entrepreneurship literature and are often used to distinguish between entrepreneurs and non-entrepreneurs. Also, Cooper and Dunkelberg (1986) use these characteristics as indicators for the degree of entrepreneurship. On the basis of these underlying entrepreneurial characteristics we have made a first attempt to rank entrepreneurial activities according to the degree of entrepreneurship involved. The results are presented in Table 2. The ranking is done as follows. For three characteristics (opportunity perception, risk-taking and innovation) we discriminate between four levels (high, medium-high, medium and low). We assign the values 1 through 4 to these levels. The score of the entrepreneurial activities equals the sum of these values. This leads to the ranking of entrepreneurial activities as more or less entrepreneurial in Table 2. Clearly, this ranking is somewhat arbitrary.

Table 2 Ranking Activities according to Degree of Entrepreneurship

Activities	Entrepreneurial Characteristics			Score	Rank
	<i>Opportunity Perception</i>	<i>Risk-taking</i>	<i>Innovation</i>		
Non-franchise start-up	1 high	1 high	1 high	3	1
Acquisition	2 medium/high	2 medium/high	2 medium/high	6	2 (tie)
Intrapreneurship	1 high	3 medium	2 medium/high	6	2 (tie)
Franchise start-up	2 medium/high	2 medium/high	3 medium	7	4 (tie)
Manage small/high-growth firm	2 medium/high	3 medium	2 medium/high	7	4 (tie)
Manage large firm	3 medium	4 low	4 low	11	6
Family Business/ Inheritance	4 low	4 low	4 low	12	7

On the basis of the entrepreneurial characteristics new venture creation, i.e., start-up from scratch, involves the highest degree of entrepreneurship. Start-up involves both the processes of perceiving an opportunity and acting upon the perceived opportunity. It involves innovation because something is created where nothing existed previously and resources are combined in a new way. In addition, the founder is willing to personally absorb the risks involved in starting a new business (Cooper and Dunkelberg, 1986). Several scholars argue that founders show higher risk-taking than non-founders (Begley, 1995; Begley and Boyd, 1987 and Hull et al., 1980).

Within the context of new venture creation more and less entrepreneurial ways of starting a new business can be distinguished (Gartner et al., 1989). Starting a franchise business can be considered less entrepreneurial because it involves less innovation. Although a franchisee runs the risk of introducing the franchisor's concept into new markets, the potential for innovation is limited since maintenance of the franchisor's concepts is important (Kaufman and Dant, 1998). Moreover, starting a franchise business also involves less opportunity perception and risk-taking because the market concept has already been developed and tested.

Acquiring a business is entrepreneurial as the purchase of an established business is preceded by opportunity perception. Although the purchaser is not involved in the founding of the business and the risk of start-up is circumvented, risk-taking is involved as the business is operated at the purchaser's own cost and risk. However, there may be relatively little need for innovation since the business is already established

and resources have already been put to use. The extent to which the purchaser is innovative depends upon his or her plans to implement changes, and pursue growth strategies, e.g., through entering new markets and/or developing new products (Cooper and Dunkelberg, 1986). Because the purchaser of a business can develop and implement his/her own ideas, the acquisition of an established business may be more entrepreneurial than the purchase of a franchise where innovation tends to be limited.

Becoming a business owner through inheritance of a (family) business involves less personal risk-taking than founding or purchasing a business (Cooper and Dunkelberg, 1986). However, risk-taking can take the form of the commitment of one's time, reputation or personal wealth. There may be no need for innovation since it may not be necessary to change the business or make additional commitments, although there may be opportunities for shaping and expanding the existing firm (Cooper and Dunkelberg, 1986)¹.

Like business founders, intrapreneurs can be considered entrepreneurial because they introduce something new, albeit within a large business and its boundaries. Intrapreneurship differs from other forms of entrepreneurship with respect to the context in which the entrepreneurial act takes place. Like managers, intrapreneurs act on behalf of an existing organization instead of for their own account (Carrier, 1996). Because entrepreneurial ideas are implemented within the context of an existing organization, the ultimate risk is born by the owner of the business instead of the initiator of the corporate venture. Risk is manifested by the probability of failure of the independent business unit and, accordingly, closure (Cunningham and Lischeron, 1991). However, alertness to opportunities is of similar importance for individual entrepreneurship and corporate entrepreneurship (Cunningham and Lischeron, 1991).

Several scholars have made a distinction between business owners and corporate managers (Carland and Carland, 1992; Smith et al., 1988). Owners are believed to show higher risk-taking than managers because their range of possibilities is larger and more uncertain (Bears, 1982) and an owner has the ultimate responsibility for decisions (Gasse, 1982). Brandstätter (1997) argues that whether someone is seen as an entrepreneur is determined first by ownership, then by decision-making power and

¹ It can be argued that inheritors are often familiar with entrepreneurship because it 'runs in the family'. This familiarity may imply they are more entrepreneurial in nature than people who are promoted or brought in by the owners.

leadership functions and finally by the size of the company². Thus, ownership is seen as more entrepreneurial than management, irrespective of firm size or characteristics.

It may be argued that there are differences in the degree of entrepreneurship between managers of different businesses. Someone managing a small business beyond the start-up phase faces different risks, i.e., challenges, as compared to someone managing a large business or someone managing a high-growth business. The different phases of the business involve different activities and different challenges, i.e., risks (Churchill and Lewis, 1983; Greiner, 1972; Garnsey, 1998). Based on the characteristics of opportunity perception, risk-taking and innovation one may propose that managers of small, young and high-growth firms are perceived as more entrepreneurial than those of established large firms.

On the basis of the previous discussion it can be argued that starting a non-franchise business – from scratch – involves the highest degree of entrepreneurship, followed by acquisition of a business, intrapreneurship, starting a franchise business, managing small or high-growth firm, managing a large business and inheriting a business or working in a family business, respectively. See Table 2.

ENTREPRENEURIAL ACTIVITY AND SELF-PERCEPTION

As part of his social learning theory Bandura (1977, 1986) argues that there is *triadic reciprocal causation* among behavior, cognitive and other personal factors and the environment. This means that on the one hand the environment and the perception of both this environment and self by an individual can influence the individual's behavior. On the other hand, the behavior of an individual influences the environment as well as the way in which he or she perceives of him- or herself and the environment³.

The relationship between entrepreneurial activity and perception has been studied mainly from the viewpoint that perception influences entrepreneurial activity (Boyd and Vozikis, 1994; Scherer et al., 1990 and 1989; Krueger and Brazeal, 1994; Krueger, 1993; Chen et al., 1998). These studies focus upon and refer to the concept of *self-efficacy* as the perceived personal ability to perform a given task. In that context it has been argued that individuals make career choices based upon their percep-

² Based on a study of IMAS (Institut für Markt und Socialanalysen), focusing on the perception of the Austrian population of what constitutes an entrepreneur in 1976 and 1986.

tion of and the associated fit with a certain profession (Fagenson and Marcus, 1991). Chen et al. (1998, p. 297) argue that "... they assess their personal capabilities against the requirements of different occupations". The choice to engage in entrepreneurial activity is dependent upon whether individuals can identify with the characteristics and behaviors that are associated with entrepreneurship.

In the present study we take the opposite perspective: explaining entrepreneurial self-perception by way of entrepreneurial activity. In the psychology literature Bem (1972) provides evidence of behavioral and environmental influences on self-perception. Self-perception theory states that "individuals come to 'know' their own attitudes, emotions and other internal states partially by inferring them from observations of their own overt behavior and / or the circumstances in which this behavior occurs" (Bem, 1972, p. 5). Though self-perception theory has been used extensively in other types of research applications, within the field of entrepreneurship relatively few empirical studies have focused upon explaining entrepreneurial self-perception from behavior. However, van Gelderen (2000) provides some evidence to support the claim that entrepreneurial behavior influences self-perception. His study investigates what people consider entrepreneurial about their own behavior.

Based on the methodology used in the present study, which compares current self-perceptions on present as well as past behavior, it may be argued that the causality between activity and self-perception can be in either direction. However, due to the design of the study, activities had to have taken place prior to completion of the questionnaire. Therefore, it is plausible to assume that at least in part, the activity influences self-perception rather than the other way around. However, future research using a longitudinal design would need to take place to establish the direction of the causality more firmly.

³ "This reciprocity does not mean that the different influences are of equal strength" (Wood and Bandura, 1989, p. 362).

GENDER AND ENTREPRENEURSHIP

Gender and Entrepreneurial Activity

Although the number of women starting and owning their own business has increased substantially in many developed countries in the past decade, in absolute numbers they are still lagging behind men (U.S. Small Business Administration, 1995; National Foundation of Women Business Owners, 1996; Carter, 2000). Moreover, women-owned businesses underperform in a number of areas relative to men-owned firms. Women-owned firms tend to engage in relatively underperforming sectors, such as retailing and services (U.S. Small Business Administration, 1995; OECD, 1998; Van Uxem and Bais, 1996), are smaller in size (Carter et al, 1997; Kalleberg and Leicht, 1991; Fischer, Reuber and Dyke, 1993; Verheul and Thurik, 2001), exhibit lower growth levels (Fischer, Reuber and Dyke, 1993; Hulshoff, Kerste and Snel, 2001), have a higher rate of discontinuing, and lower profits (Carter et al., 1997).

Several reasons have been proposed to explain the performance differences between male and female-owned firms, including the level of relevant business experience (Cliff, 1998, Cromie and Birley, 1992; Watkins and Watkins, 1983; Kalleberg and Leicht, 1991; Fischer, Reuber and Dyke, 1993; Verheul and Thurik, 2001), the proportion of total workweek committed to the business (Brush, 1992; Goffee and Scase, 1985; and Stigter, 1999), and the propensity to take risk (Verheul and Thurik, 2001; Sexton and Bowman-Upton, 1990; Masters and Meier, 1988). Others refer to differences in values across gender, positing that women value quality or other goals not directly related to growth and economic performance (Brush, 1992; Du Rietz and Henrekson, 2000; Kalleberg and Leicht, 1991; Rosa et al., 1996; Verheul and Thurik, 2001).

Gender and Self-Perception

Past research on gender differences in self-perception has mainly focused on managerial self-perception. These studies suggest that women tend to underrate their skills or performance as compared to men (Wohlers and London, 1989; Lindeman et al., 1995). This underrating has been attributed to the fact that women often do not take credit for success, attributing it more to external sources or to effort than ability

(Rosenthal, Guest and Peccei, 1996; Parsons, Meece and Kaczala, 1982; LaNoue and Curtis, 1985). Moreover, Rosenthal et al. (1996) argue it may be 'proper female modesty' accounting for the underrating by female managers.

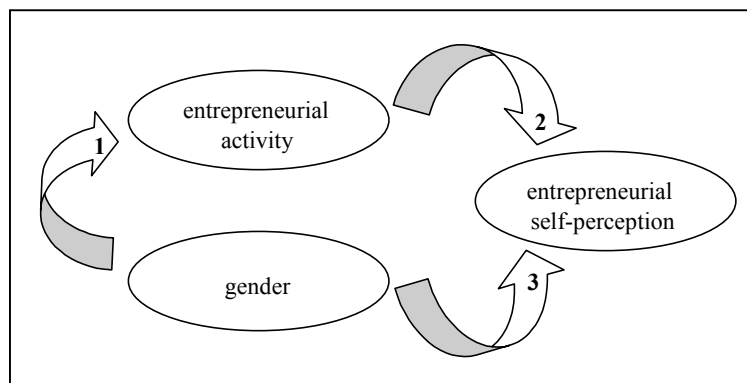
Beyer (1990, 1998) and Beyer and Bowden (1997) argue that when (managerial) tasks and roles are perceived as more masculine than feminine, women are more likely than men to underestimate their competencies in these areas. Along these lines, Schein (1973, 1975) finds that managers are perceived to have characteristics more commonly associated with men than with women. Extending this line of reasoning to the field of entrepreneurship it can be argued that because entrepreneurship is often associated with masculine characteristics, such as autonomy, perseverance, high energy levels, self-confidence and decisiveness (Chaganti, 1986; Hisrich and Brush, 1983), this may negatively effect the entrepreneurial self-perception of women. In further support of this argument, Fagenson and Marcus (1991) find that women assign more weight to masculine attributes in the profile of an entrepreneur.

Combining the previous discussions on both the influence of gender on activity and that of gender on self-perception, it can be argued that because the economic criteria of size and growth are often used as measures of success (Cliff, 1998; Buttner and Moore, 1997), and growth-orientation is considered an important entrepreneurial characteristic (Dunkelberg and Cooper, 1982), women may perceive of themselves as less entrepreneurial as they tend to manage small and low-growth businesses.

MODEL AND HYPOTHESES

We propose a model including the independent influence of both gender and entrepreneurial activity on entrepreneurial self-perception as well as the combined effect of gender and entrepreneurial activity. The model is presented in Figure 1.

Figure 1 Model: Influences on Entrepreneurial Self-Perception



We argue that gender can have both a direct and an indirect effect on entrepreneurial self-perception. The indirect effect refers to differences between men and women with respect to entrepreneurial activity that lead to differences in their entrepreneurial self-perception (see arrow 1 and 2 in Figure 1), whereas the direct effect refers to gender differences in self-perception that can not be attributed to differences in activity (see arrow 3 in Figure 1). The direct effect is the effect of gender on entrepreneurial self-perception when controlled for differences in entrepreneurial activity. The model builds on previous research efforts distinguishing between direct and indirect gender effects in other areas of entrepreneurial behavior, such as financing (Verheul and Thurik, 2001).

Based on this model we test the following hypotheses. With respect to the relationship between gender and entrepreneurial activity we have only formulated hypotheses for those entrepreneurial activities where it is assumed there are gender differences based on the literature or practice. In addition to the entrepreneurial activities of Vesper's typology, we also include other activities in the empirical analysis to create a better insight into the influence of activity of entrepreneurial self-perception (see Table 3).

Hypothesis 1.1: Women are less likely to start a business, whether franchise or non-franchise, than men (i.e. *Franchise/Non-Franchise Starter*)⁴.

Hypothesis 1.2: Women are less likely to own a small- or medium-sized business than men (i.e. *Owner*).

Hypothesis 1.3: Women are less likely to manage a small-or medium-sized business than men (i.e. *Runner*).

Hypothesis 1.4: Women are less likely to manage a high-growth business than men (i.e. *Take-Off Artist*).

Hypothesis 1.5: Women are less likely to run a large business than men (i.e. *Industry Captain*).

Hypotheses 1.1 through 1.5 reflect the impact of gender on entrepreneurial activity (see arrow 1 in Figure 1). Past research shows that men and women often engage in different entrepreneurial activities. Women are less likely to own and run a business

⁴ See Vesper's typology, Table 1 or Table 3 for the added entrepreneurial activities.

than men. Moreover, as they often tend to focus on quality instead of quantity, women are expected to be involved less often in managing a high-growth or large business.

Hypothesis 2: People who engage in the behavioral activities described in Vesper's entrepreneurial typology perceive of themselves as more entrepreneurial than people who are not engaged in such activity.

Hypothesis 2 represents the impact of entrepreneurial activity on entrepreneurial self-perception (see arrow 2 in Figure 1). Hypothesis 2 is more exploratory in nature than Hypotheses 1.1 through 1.5. That is, we make no specific a priori predictions about which activities affect self-perceptions nor do we predict their respective weights. Although the literature does support the notion that different activities may involve different degrees of entrepreneurship, to our knowledge, previous research has not linked these specific entrepreneurial activities and entrepreneurial self-perception.

Hypothesis 3: Women have a lower entrepreneurial self-perception than men, irrespective of the type of entrepreneurial activity they engage in.

As discussed earlier in the paper women tend to underrate their skills or performance as compared to men. They often do not take credit for success and attribute it to external factors or luck. Moreover, when tasks and roles are perceived as more masculine than feminine, women are more likely to underestimate their competencies in these areas. Irrespective of how it is measured, entrepreneurship is often perceived of as more masculine than feminine, so that women may be expected to perceive of themselves less as entrepreneurs. This leads to formulating Hypothesis 3, representing the direct effect of gender on self-perception (see arrow 3 in Figure 1).

Because it is argued that gender influences entrepreneurial activity (Hypotheses 1.1 through 1.5) and that entrepreneurial activity influences entrepreneurial self-perception (Hypothesis 2) it is expected, in turn, that gender also influences entrepreneurial self-perception indirectly through entrepreneurial activity (see arrow 1 and 2 combined in Figure 1).

METHOD

Data Source

Data were collected using questionnaires returned by 186 alumni of a large Midwestern U.S. university of whom 134 were male and 52 were female. The sample was compiled from three subsamples, including graduates of the MBA program within the immediate metropolitan area, alumni identified as either a president or CEO of a private firm, through the Dun and Bradstreet database, and finally, graduates from the previous five- year period who had enrolled in an introductory course in entrepreneurship. Instead of a random sample of alumni from the same institution, selected subsamples were chosen to increase the likelihood that alumni would indeed be business founders and owners. The response rate was approximately 17 percent for the entire sample. Further, due to the specific topic of the survey, there may have been a self-selection bias where those not currently involved in entrepreneurship or business activities may have been less likely to respond than those who were involved in these activities. Because we do not have figures for the overall university population it is difficult to estimate the degree of a possible bias.

Description of Variables

Table 3 summarizes the way in which dependent and independent variables are measured. The classification of entrepreneurial activities is based on the entrepreneurial typology as proposed by Vesper (1999) – see Table 1. Additional entrepreneurial activities – Owner, Family Business, and Service Provider – are included in the analysis to create more insight into the impact of the different entrepreneurial activities on Entrepreneurial Self-Image. We also added the distinction between Franchise and Non-Franchise Starter. Starting a franchise business is often considered less entrepreneurial than starting a non-franchise business because an idea or concept is purchased that has already been developed and, accordingly, less innovation and risk is involved.

Table 3 Description of Variables

Name variable	Description variable
Entrepreneurial Self-Image	The extent to which an individual perceives of him- or herself as an entrepreneur. <i>Question: would you call yourself an entrepreneur?</i> (1 = 'no', 2 = 'don't think so', 3 = 'maybe', 4 = 'possibly', 5 = 'definitely')
Gender	Whether an individual is male or female. (male = 0 and female = 1)
Entrepreneurial Activity ^a	
Franchise Starter ^b	Created a new <i>franchise</i> company from start-up (no = 0, yes = 1)
Non-Franchise Starter ^b	Created a new <i>non-franchise</i> company from start-up (no = 0, yes = 1)
Acquirer ^b	Acquired an on-going concern? (no = 0, yes = 1)
Runner ^b	Managed a small to mid-sized business beyond start-up? (no = 0, yes = 1)
Take-Off Artist ^b	Steered a company into a high growth trajectory (no = 0, yes = 1)
Turnaround Artist ^b	Saved a failing company (no = 0, yes = 1)
Intrapreneur ^b	Led an effort to create a business unit within an established company? (no = 0, yes = 1)
Innovator ^b	Made something new happen (e.g. new product, program) other than a new business unit or new company (no = 0, yes = 1)
Industry Captain ^b	Ran a large company (no = 0, yes = 1)
Champion ^b	Supported subordinate innovator(s) or intrapreneur(s) (no = 0, yes = 1)
Owner	Owned a major part of a business (no = 0, yes = 1)
Family Business	Worked as member of a family business (2 or more family members, including yourself, active in the business) (no = 0, yes = 1)
Service Provider	Worked with / assisted entrepreneurs as a service provider (no = 0, yes = 1)

^a For this group of questions respondents were instructed as follows: "The following describe various types of business accomplishments. Please check any of the following that you have done in the past or are currently doing".

^b Derived from Vesper (1999).

Data Analysis

The first set of hypotheses, Hypotheses 1.1 through 1.5 (arrow 1 in Figure 1) examines the relationship between gender and the different entrepreneurial activities. These relationships are tested in two ways. First, we use the Pearson Product-Moment correlation coefficient to examine the direction of the relationship, and further, we apply the Fisher's Exact test, which adjusts for low cell sizes by gender. Hypothesis 2 (arrow 2 in Figure 1) examines the relationship between entrepreneurial activity and entrepreneurial self-perception. It is initially tested, again with Pearson Product-Moment

correlation coefficients, and subsequently with the use of a linear regression technique including all the entrepreneurial activity variables. Finally, to separate direct and indirect effects of gender on entrepreneurial self-perception, a series of linear regressions are carried out comparing the respective contributions of gender and entrepreneurial activities (entered as a block), taken together, or alone, as well as a second series of linear regressions testing for the possibility of second-order interaction effects between gender and various entrepreneurial activity variables.

Throughout the paper we worked with both one- and two-tailed hypotheses. As critical values of the one-tailed test procedures always exceed that of the two-tailed test procedures, we leave out the one-tailed results for ease of presentation.

RESULTS

Interrelationships among Entrepreneurial Activities

Table 4 shows the extent of multicollinearity among the different types of entrepreneurial activity. Most strongly associated activities include the relationships between Runner and Take-off Artist ($r=.41$, $p<.01$) and between Runner and Owner ($r=.46$, $p<.01$).

Tests of Hypotheses 1.1 through 1.5: Gender and Various Entrepreneurial Activities

Because of the possibility of a skewed sample and low cell sizes we made use of Fisher's Exact Test to test Hypotheses 1.1 through 1.5. Table 5 presents these results. As revealed in Table 5, some of the cells are quite small, especially for women. As can be seen from Table 5 women are less likely than men to be involved in Runner activity and there is a trend for the lower involvement of women in Non-Franchise Starter and Industry Captain activity. Thus, based on this test, Hypotheses 1.1, 1.3 and 1.5 are supported. In addition, women are less likely than men to be an Acquirer or Turnaround Artist. Finally, based on data for both Tables 4 and 5, there is no support for gender differences with respect to Owner (Hypothesis 1.2) or Take-Off Artist (Hypothesis 1.4).

Table 4 Pearson Correlation between All Variables for the Total Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Entrepreneurial Self-Image	1														
2. Gender	-.23***	1													
3. Franchise Starter	.08	-.06	1												
4. Non-Franchise Starter	.66***	-.13*	-.14*	1											
5. Acquirer	.20***	-.17**	-.04	.01	1										
6. Runner	.42***	-.20***	.08	.30***	.25***	1									
7. Take-Off Artist	.22***	-.06	-.08	.11	.27***	.41***	1								
8. Turnaround Artist	-.06	-.19**	.20***	-.04	.33***	.21***	.23***	1							
9. Intrapreneur	.18**	-.09	.004	.06	.21***	.21***	.31***	.12*	1						
10. Innovator	-.02	.01	.002	-.11	.08	.05	.31***	.16**	.23***	1					
11. Industry Captain	.15*	-.14*	-.05	.18**	.11	.18**	.33***	.16**	.25***	.14*	1				
12. Champion	.10	.09	.13*	-.02	-.04	.10	.18**	.06	.31***	.26***	.10	1			
13. Owner	.33***	-.06	.07	.33***	.15**	.46***	.18**	.05	.08	.13*	.20***	.01	1		
14. Family Business	.10	.05	-.04	.17**	.05	.15**	-.08	.06	.06	-.07	-.06	.02	.26***	1	
15. Service Provider	.13*	-.08	-.07	.05	.11	.12*	.12*	.08	.07	-.01	.15**	.23***	.04	.09	1

* Correlation is significant at the 0.10-level (2-tailed).

** Correlation is significant at the 0.05-level (2-tailed).

*** Correlation is significant at the 0.01-level (2-tailed).

Table 5 Distribution Information Entrepreneurial Activity in Data Sample

Variable	Total (n = 186)		Men (n = 134)		Women (n = 52)	
	%	n	%	n	%	n
Franchise Starter	3.8	7	4.5	6	1.9	1
Non-Franchise Starter*	62.2	115	66.2	88	51.9	27
Acquirer**	23.2	43	27.8	37	11.5	6
Runner***	38.4	71	44.4	59	23.1	12
Take-Off Artist	15.1	28	16.5	22	11.5	6
Turnaround Artist***	11.4	21	15.0	20	1.9	1
Intrapreneur	27.6	51	30.1	40	21.2	11
Innovator	28.1	52	27.8	37	28.8	15
Industry Captain*	4.9	9	6.8	9	.	0
Champion	9.2	17	7.5	10	13.5	7
Owner	27.6	51	29.3	39	23.1	12
Family Business	21.6	40	20.3	27	25.0	13
Service Provider	11.9	22	13.5	18	7.7	4

* Difference between men and women is significant at the 0.10-level (2-tailed).

** Difference between men and women is significant at the 0.05-level (2-tailed).

*** Difference between men and women is significant at the 0.01-level (2-tailed).

Tests of Hypothesis 2: Entrepreneurial Activity and Entrepreneurial Self-Image

Though no predictions are made a priori, reviewing the data from Table 4 provides support for the relationship between Entrepreneurial Self-Image and several entrepreneurial activity variables, including Non-Franchise Starter ($r=.66$, $p<.01$), Runner ($r=.42$, $p<.01$), Owner ($r=.33$, $p<.01$), Take-Off Artist ($r=.22$, $p<.01$), Acquirer ($r=.20$, $p<.01$), and Intrapreneur ($r=.18$, $p<.05$). In addition, there are trends for Industry Captain ($r=.15$, $p<.10$) and Service Provider ($r=.13$, $p<.10$). In a second test of this hypothesis, several of the entrepreneurial activities are combined in a linear multiple regression. Because of the high multicollinearity between both Owner and Runner and Owner and Non-Franchise Starter – the latter of which we assume to have an important impact on Entrepreneurial Self-Image –, Owner is excluded from our presentation of the results. Take-Off Artist is also excluded because this activity has a high correlation with Runner and does not correlate with Gender. We excluded Industry Captain since no women in the sample reported participation in this activity and because this activity is correlated with Non-Franchise Starter. Leaving out these activities from the analysis does not distort the general picture of our conclusions.

As shown in Table 6, the adjusted R^2 for the included entrepreneurial activities is .534 ($p<.01$). Due to multicollinearity among some of these variables, the interpretation of the betas as a measure of the impact of entrepreneurial activity on Entrepreneurial Self-Image is somewhat suspect. Nevertheless, these exploratory results suggest that Starter activity (whether Franchise or Non-Franchise), Acquirer activity and Runner

activity contribute positively to Entrepreneurial Self-Image, whereas Turnaround Artist activity has a negative effect (especially when controlled for the other activities). The negative effect of Turnaround Artist on Entrepreneurial Self-Image may be explained by the fact that there are different ways to save a failing business. Not only can a business be saved through development and implementation of a new or (partly) revised strategy, but this can also be done through financial support. In the latter case the individual in question, although running the risk of his or her invested money, is a financial backer of an entrepreneur, rather than someone who develops and implements new ideas him/herself. The results also show that Non-Franchise Starter activity is considered most entrepreneurial. The bulk of the variance (R^2) is explained by Non-Franchise Starter activity, followed by Acquirer, Franchise Starter and Runner activity, respectively. This is reasonable in line with the literature on the degree of entrepreneurship as summarized in Table 2, although the relationship between Intrapreneur and Entrepreneurial Self-Image is not as strong as expected.

Perhaps the most striking difference between Tables 4 and 6 relate to the Franchise Starter activity, which, when controlled for other activities, does contribute positively to Entrepreneurial Self-Image, though the zero-order correlation coefficient is not significant ($r=.08$, ns).

Table 6 Linear Regression on Entrepreneurial Self-Image for the Total Sample Including All Variables, Entrepreneurial Activities Only and Gender Only

	All Variables		Entrepreneurial Activities		Gender Only		ΔR^2 ^a
	β -value	t-value	β -value	t-value	β -value	t-value	
Franchise Starter	1.34**	3.13	1.40**	3.25	0	-	0.025
Non-Franchise Starter	1.90**	10.85	1.93**	11.00	0	-	0.306
Acquirer	0.68**	3.25	0.72**	3.43	0	-	0.027
Runner	0.55**	3.06	0.60**	3.27	0	-	0.024
Turnaround Artist	-0.81**	-2.74	-0.75*	-2.53	0	-	0.020
Intrapreneur	0.17	0.86	0.20	1.04	0	-	0.002
Champion	0.45	1.44	0.36	1.16	0	-	0.005
Innovator	0.06	0.33	0.05	0.27	0	-	0.000
Family Business	-0.13	-0.67	-0.17	-0.84	0	-	0.001
Service Provider	0.12	0.47	0.16	0.59	0	-	0.001
Gender	-0.37*	-2.04	0	-	-0.79**	-3.18	0.011
R^2	0.571		0.560		0.054		
Adjusted R-square	0.542		0.534		0.049		
F-statistic	19.96**		21.14**		10.05**		
R^2							

** Significant at the 0.01-level.

* Significant at the 0.05-level.

^a Change in R^2 when excluding variables from the analysis.

Note: β -values refer to the unstandardized coefficients of the explanatory variables.

Tests of Direct and Indirect Effects of Gender on Entrepreneurial Self-Image

From the *Gender Only* column in Table 6 we conclude that women are less likely to see themselves as entrepreneurs. From the *All Variables* column we conclude that in a joint analysis the gender effect remains intact when controlling for the effect of the entrepreneurial activity variables on Entrepreneurial Self-Image. Because Gender is significantly correlated with several of the entrepreneurial activity variables (see Table 5) it may be argued that the *total* effect of Gender on Entrepreneurial Self-Image can be separated into a direct and indirect effect. The direct effect can be found in the *All Variables* column, whereas the indirect effect can be inferred from the results of the significance of the difference in entrepreneurial activities between men and women in Table 5 and the effect of these entrepreneurial activities on Entrepreneurial Self-Image in Table 6. Women are less likely to be Non-Franchise Starters, Acquirers or Runners, while these activities appear to contribute to a higher Entrepreneurial Self-Image. Also, women are less likely to be Turnaround Artists and this appears to have a negative effect on Entrepreneurial Self-Image. From the *Entrepreneurial Activities* column we see that leaving out the gender variable does not appear to have distorting effects as the influence of the different entrepreneurial activities on Entrepreneurial Self-Image remains fairly similar. In sum, these findings provide support for Hypothesis 3, representing the direct gender effect, and also for the indirect gender effect on Entrepreneurial Self-Image. Both effects appear to be negative: women perceive of themselves as less entrepreneurial than men, independent of activities undertaken. Moreover, because women are less likely to be involved in activities that positively contribute to Entrepreneurial Self-Image – with the exception of Turnaround Artist activity – this again negatively influences their Entrepreneurial Self-Image.

Further Exploration of Gender Effects on Entrepreneurial Self-Image

Table 7 presents a linear regression on Entrepreneurial Self-Image for the total sample including the entrepreneurial activity variables that were significant in Table 6, the gender variable and interaction terms (i.e. the multiplicative effect of Gender and the various entrepreneurial activity variables). To test for differences in the valuation of entrepreneurial activities we introduce a multiplicative model in Table 7 with the gender variable not only playing a role at the *intercept* level but also at the level of entrepreneurial activity. Not only are women and men engaged in different activities, it

may also be that they value these activities differently. Accordingly, in terms of Figure 1, we can introduce a fourth arrow from gender to arrow 2.

In Table 7 the coefficients of variables 1 to 5 represent the effect of entrepreneurial activity of men on Entrepreneurial Self-Image. The coefficients of variables 7 to 11 in this column represent the difference in effect of entrepreneurial activity on Entrepreneurial Self-Image between men and women. In other words, these coefficients represent the excess *female* effect of entrepreneurial activities on Entrepreneurial Self-Image. For example, the coefficient for the Runner variable (1.25) represents the male part of the effect of Runner on Entrepreneurial Self-Image whereas the sum of the coefficients of Runner and Gender*Runner ($1.25 - 0.82 = 0.43$) represents the female part of the effect of Runner on Entrepreneurial Self-Image.

As can be seen from Table 7 the direct gender effect remains intact when including interaction terms, albeit at the 10 percent significance level only. The relatively low t-value of the gender coefficient should be interpreted in view of the many ways in which gender can influence the results. Still, a direct gender effect remains, after controlling for the various entrepreneurial activities and interaction effects of gender and entrepreneurial activities. The question is whether there are gender effects that can be attributed to differences in valuation and / or contribution of entrepreneurial activities. It appears there is only one dimension where women and men seem to value entrepreneurial activity differently: Runner ($p < 0.10$). Runner activity contributes to the Entrepreneurial Self-Image of men, but not to that of women. We have no straightforward explanation for this counterintuitive finding.

Table 7 Linear Regression on Entrepreneurial Self-Image for the Total Sample Including Entrepreneurial Activities, Gender and Interaction Terms (i.e., the Multiplicative Effect of Gender and Entrepreneurial Activity)

	β -value	<i>t</i> -value
1. Franchise Starter	- 0.13	- 0.12
2. Non-Franchise Starter	1.92**	6.12
3. Acquirer	0.42	0.85
4. Runner	1.25**	3.34
5. Turnaround Artist	- 0.97	- 0.91
6. Gender	- 0.53 ^a	- 1.83
7. Gender x Franchise Starter	1.71	1.45
8. Gender x Non-Franchise Starter	- 0.07	- 0.20
9. Gender x Acquirer	0.37	0.69
10. Gender x Runner	- 0.82 ^a	- 1.92
11. Gender x Turnaround Artist	0.17	0.15
R^2	0.570	
Adjusted R-square	0.542	
F-statistic	19.92**	
N (df)	176 (11,165)	

** Significant at the 0.01-level.

* Significant at the 0.05-level.

^a Significant at the 0.10-level

DISCUSSION

The primary motivation for this research is two-fold: to provide a fresh perspective on the definition and operationalization of entrepreneurship, using the perspective of (prospective) entrepreneurs themselves; and secondly, to explore the direct and indirect gender effects on entrepreneurial self-perceptions. Although the study is exploratory in nature, rather explicable patterns emerge, suggesting that entrepreneurial self-perception is linked with popular notions of the concept. Starters of non-franchise businesses are most likely to view themselves as entrepreneurs. But participation in other business activities is also associated with a more entrepreneurial self-image, including acquisition of an on-going concern, managing a small to mid-sized business beyond start-up, steering a company into a high growth trajectory, being an intrapreneur, or owning a business. Notably, participation in these business activities does not guarantee that an individual perceives of him- or herself as an entrepreneur. This outcome suggests that other variables also influence an individual's self-perceptions.

Gender effects are one possible explanation for these differences in the impact of entrepreneurial activity on entrepreneurial self-perceptions. The data presented provide evidence that gender effects on entrepreneurial self-perception arise, both indirectly – through the actual activities women participate in and directly – independent of activi-

ties undertaken. In addition to these gender effects the data indicate that it is likely that women value entrepreneurial activities differently. Taken together, it appears that women perceive of themselves as less entrepreneurial than men do, whether or not controlled for the participation in and / or the valuation of activities.

Although several significant gender effects are found, these effects appear relatively small in absolute terms, with the greater impact resulting probably from differences in objective choices of entrepreneurial activities between men and women. However, a larger, more random sample of a more representative group of the population (and not just university graduates) should be used when retesting the hypotheses.

Vesper's typology provides an interesting starting point for exploring the different objective entrepreneurial activities. Although indeed the correlation among several activities is statistically significant, what people identify as entrepreneurial activity does appear to represent a much broader range of activity than simply "starting" a business. Further exploration of this typology is certainly warranted in future research of entrepreneurial activity.

Furthermore, this study has clear limitations in its ability to test for the underlying characteristics that help to predict why different entrepreneurial activities vary in their effects on entrepreneurial self-perception. Future research should develop a more complete model, also providing measurement of intervening variables, such as perceived risk-taking, creativity and innovation, explaining these linkages. This may occur either through direct measurement of these concepts or through a more detailed exploration of the various activities regarding, for example, the uniqueness of the company started or the changes made once a company is acquired.

This paper draws upon the world of self-concept. According to William James (1890, 1950) the 'empirical self', consisting of a material, social and spiritual component, is the key to understanding the experience of individuals⁵. Entrepreneurial self-perception can be viewed best as part of the social self, i.e., the impression someone has on others. People come to know themselves in part by the process of 'mirroring', i.e., receiving knowledge about oneself through the reactions of others. In the present paper it is argued that people come to know themselves by drawing information from their own behavior. Because society attaches certain values to different behaviors, in-

⁵ See Smith (1992) for a detailed discussion of William James's theory of self.

dividuals can be assumed to be influenced by these 'cultural values'. Because different countries or societies have different values, the self-concept is likely to vary internationally, although globalization may have somewhat weakened these differences. Evidence of cultural differences with respect to the self-concept is presented in a study of Abe, Bagozzi and Sadarangani (1996) which builds upon the distinction between independent and interdependent cultures. The culture-dependency of the self-concept limits the extent to which the results of the present study, using American data, can be translated to countries or regions outside the United States, or in particular, to the European situation. It can be expected that as compared to non-western countries, western countries, including the United States, have a more independent self-concept⁶. Thus, future research should also compare entrepreneurial self-perceptions in different cultural settings as a specific aspect of the broader concept of self-concept.

CONCLUSION AND SUMMARY

The main goal of this study is to shed light on the various interrelationships between entrepreneurial activity, gender, and entrepreneurial self-perception. The findings, taken together, clearly support the explanatory power of objective entrepreneurial activity to predict entrepreneurial self-image, in line with Bem's self-perception theory. In particular, the greater part of the variation in entrepreneurial self-image can be explained by the objective entrepreneurial activities in which respondents participate. Gender, though weaker in its explanatory power, also appears to provide added explanation to the model. Gender influences entrepreneurial self-perception in different ways. Women tend to select different activities than men, choosing less frequently those activities both genders view as entrepreneurial. In addition, women are less likely to perceive of themselves as entrepreneurs, independent of activities undertaken. It may be expected that women value activities differently than men do, although the present study does not provide sound evidence for this third gender effect.

In sum, although some of the gender effects are small in absolute terms, the study does demonstrate the importance of including gender as a control variable in general research questions of interest in the field of entrepreneurship. Finally, at a more practical level, if these differences hold up in follow-up research, different guidelines for

⁶ For more information on the distinction between the independent and the interdependent self-concept we refer to Abe, Bagozzi and Sadarangani (1996), who - in turn - refer to Markus and Kitayama (1991) and Triandis (1989).

attracting, supporting and counseling female entrepreneurs and small business owners should be considered by directors of small business service centers and other service providers. Further research is needed to provide direction for such guidelines.

REFERENCE LIST

- Abe, S., Bagozzi, R.P. and P. Sadarangani, 1996, An investigation of construct validity and generalizability of the self-concept: self-consciousness in Japan and the United States, *Journal of International Consumer Marketing* 8 (3,4), 97-123.
- Bandura, A., 1977, Self-efficacy: Toward a unifying theory of behavioral change, *Psychological Review* 84, 91-215.
- Bandura, A., 1986, *Social Foundations of Thought and Action: A Social Cognitive Theory*, Englewood Cliffs, NJ: Prentice-Hall.
- Bearse, P.J., 1982, A study of entrepreneurship by region and SMSA size. In: Vesper, K.H. (ed.), *Frontiers of Entrepreneurship Research*, Wellesley, MA: Babson College, 78-112.
- Begley, T.M., 1995, Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs from managers of smaller businesses, *Journal of Business Venturing* 10 (3), 249-263.
- Begley, T.M. and D.P. Boyd, 1987, Psychological characteristics associated with performance in entrepreneurial firms and smaller businesses, *Journal of Business Venturing* 2, 79-93.
- Bem, D.J., 1972, Self-perception theory. In: Berkowitz, L. (ed.), *Advances in Experimental Social Psychology* 6, 1-62.
- Beyer, S., 1998, Gender differences in self-perception and negative recall biases, *Sex Roles* 38, 103-133.
- Beyer, S., 1990, Gender differences in the accuracy of self-evaluations of performance, *Journal of Personality and Social Psychology* 54, 5-12.
- Beyer, S. and E.M. Bowden, 1997, Gender differences in self-perceptions: convergent evidence from three measures of accuracy and bias, *Personality and Social Psychology Bulletin* 23, 157-172.
- Boyd, N.G. and G.S. Vozikis, 1994, The influence of self-efficacy on the development of entrepreneurial intentions and actions, *Entrepreneurship Theory and Practice* 18 (4), 63-77.
- Brandstätter, H., 1997, Becoming an entrepreneur - a question of personality structure?, *Journal of Economic Psychology* 18, 157-177.
- Brush, C.G., 1992, Research on women business owners: past trends, a new perspective and future directions, *Entrepreneurship: Theory and Practice*, Summer, 1991, 5-30.
- Cantillon, R., 1931, *Essai sur la nature du commerce en général*, edited and translated by H. Higgs, London: MacMillan.
- Carland, J.W. and J.A. Carland, 1992, Managers, small business owners and entrepreneurs: the cognitive dimension, *Journal of Business and Entrepreneurship* 4 (2), 55-62.
- Carland, J.W., Hoy, F., Boulton, W.R. and J.C. Carland, 1984, Differentiating entrepreneurs from small business owners: a conceptualization, *Academy of Management Review* 9 (2), 354-359.
- Carrier, C., 1996, Intrapreneurship in small businesses: an exploratory study, *Entrepreneurship Theory and Practice* 21 (1), 5-20.
- Carter, S., 2000, Gender and Enterprise. In: Carter, S. and D. Jones-Evans (eds.), *Enterprise and Small Business. Principles, Practice and Policy*, Harlow: Prentice Hall / Pearson Education Limited.
- Carter, N.M., Williams, M. and P.D. Reynolds, 1997, Discontinuance among new firms in retail: the influence of initial resources, strategy and gender, *Journal of Business Venturing* 12 (2), 125-145.
- Chaganti, R., 1986, Management in women-owned enterprises, *Journal of Small Business Management* 24 (4), 18-29.
- Chandler, A., 1990, *Scale and Scope: The Dynamics of Industrial Capitalism*, Harvard University Press, Cambridge.

- Chen, C.C., Greene, P.G. and A. Crick, 1998, Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?, *Journal of Business Venturing* 13 (4), 295-316.
- Churchill, N.C. and V.L. Lewis, 1983, The five stages of small firm growth, *Harvard Business Review*, May-June, 30-50.
- Cliff, J.E., 1998, Does one size fit all? Exploring the relationship between attitudes towards growth, gender and business size, *Journal of Business Venturing* 13, 523-542.
- Cooper, A.C. and W.C. Dunkelberg, 1986, Entrepreneurship and paths to business ownership, *Strategic Management Journal* 7, 53-68.
- Cromie, S. and S. Birley, 1992, Networking by female business owners in Northern Ireland, *Journal of Business Venturing* 7 (3), 237-251.
- Cunningham, J.B. and J. Lischeron, 1991, Defining entrepreneurship, *Journal of Small Business Management* 29 (1), 45-61.
- Du Rietz, A. and M. Henrekson, 2000, Testing the female underperformance hypothesis, *Small Business Economics* 14, 1-10.
- Dunkelberg, W.C. and A.C. Cooper, 1982, Entrepreneurial typologies: an empirical study. In: Vesper, K.H. (ed.), *Frontiers of Entrepreneurship Research*, Wellesley, MA: Babson College, 1-15.
- Fagenson, E.A. and E.C. Marcus, 1991, Perceptions of the sex-role stereotypic characteristics of entrepreneurs: women's evaluations, *Entrepreneurship: Theory and Practice*, Summer 1991, 33-47.
- Fischer, E.M., Reuber, A.R. and L.S. Dyke, 1993, A theoretical overview and extension of research on sex, gender and entrepreneurship, *Journal of Business Venturing* 8, 151-168.
- Garnsey, E., 1998, A theory of early growth of the firm, *Industrial and Corporate Change* 7, 523-556.
- Gartner, W.B., 1989, "Who is an entrepreneur?" is the wrong question, *Entrepreneurship Theory and Practice* 13, 47-68.
- Gartner, W.B., 1985, A conceptual framework for describing the phenomenon of new venture creation, *Academy of Management Review* 10, 696-706.
- Gartner, W.B., Mitchell, T.R. and K.H. Vesper, 1989, A taxonomy of new business ventures, *Journal of Business Venturing* 4, 169-186.
- Gasse, Y., 1982, Elaborations on the psychology of the entrepreneur. In: Kent, C.A., D.L. Sexton, and K.H. Vesper (eds.), *Encyclopedia of Entrepreneurship*, Englewood Cliffs, NJ: Prentice-Hall, 57-71.
- Gelderen, M. van, 2000, Enterprising behaviour of ordinary people, *European Journal of Work and Organizational Psychology* 9 (1), 81-88.
- Goffee, R. and R. Scase, 1985, *Women in Charge: The Experiences of Female Entrepreneurs*, London: George Allen and Unwin.
- Greiner, L.E., 1972, Evolution and revolution as organizations grow, *Harvard Business Review* 50, 37-46.
- Hébert, R.F. and A.N. Link, 1989, In search of the meaning of entrepreneurship, *Small Business Economics* 1, 39-49.
- Hisrich, R. and C.G. Brush, 1983, The woman entrepreneur: implications of family, educational and occupational experience, *Frontiers of Entrepreneurship Research*, Wellesley, MA: Babson College, 255-270.
- Hornaday, J.A., 1992, Thinking about entrepreneurship: a fuzzy set approach, *Journal of Small Business Management* 30 (4), 12-23.
- Hull, D., Bosley, J. and G. Udell, 1980, Renewing the hunt for the heffalump: identifying potential entrepreneurs by personality characteristics, *Journal of Small Business Management* 18 (1), 11-18.
- Hulshoff, H.E., Kerste, R. and D. Snel, 2001, Jonge ondernemingen in 2000, EIM Business and Policy Research, Zoetermeer.

- James, W., 1890, *The Principles of Psychology* (vol. 1/2), New York: Holt.
- James, W., 1950, *The Principles of Psychology*, (reprint, original publication in 1890) New York: Dover.
- Kalleberg, A.L. and K.T. Leicht, 1991, Gender and organizational performance: determinants of small business survival and success, *Academy of Management Journal* 34 (1), 136-161.
- Kaufman, P.J. and R.P. Dant, 1998, Franchising and the domain of entrepreneurship research, *Journal of Business Venturing* 14, 5-16.
- Kirzner, I.M., 1979, *Perception, Opportunity and Profit*, Chicago: University of Chicago Press.
- Knight, F.H., 1921, *Risk, Uncertainty and Profit*, (ed. G.J. Stigler), Chicago: University of Chicago Press.
- Krueger, N., 1993, The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability, *Entrepreneurship Theory and Practice* 18 (1), 5-21.
- Krueger, N.F. Jr. and D.V. Brazeal, 1994, Entrepreneurial potential and potential entrepreneurs, *Entrepreneurship Theory and Practice* 18 (3), 91-104.
- LaNoue, J.B. and R.C. Curtis, 1985, Improving women's performance in mixed-sex situations by effort attributions, *Psychology of Women Quarterly* 9, 337-356.
- Lindeman, M., Sundvik, L. and P. Rouhiainen, 1995, Underestimation or overestimation of self-person variables and self-assessment accuracy in work settings, *Journal of Social Behaviour and Personality* 10, 123-134.
- Low, M. and I. MacMillan, 1988, Entrepreneurship: past research and future challenges, *Journal of Management* 14 (2), 139-161.
- Lumpkin, G.T. and G.G. Dess, 1996, Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of Management Review* 21 (1), 135-172.
- Markus, H. and S. Kitayama, 1991, Culture and the self: implications for cognition, emotion, and motivation, *Psychological Review* 98, 224-253.
- Masters, R. and R. Meier, 1988, Sex differences and risk taking propensity of entrepreneurs, *Journal of Small Business Management* 26 (1), 31-35.
- McClelland, D.C., 1961, *The Achieving Society*, Princeton, NJ: Van Nostrand.
- McClelland, D.C., 1965, Need achievement and entrepreneurship: a longitudinal study, *Journal of Personality and Social Psychology* 1, 389-392.
- Morris, M.H. and F.F. Jones, 1999, Entrepreneurship in established organizations: The case of the public sector, *Entrepreneurship Theory and Practice* 24 (1), 71-91.
- National Foundation of Women Business Owners (NFWBO), 1996, *Research Findings*, silver Spring, MD: NFWBO.
- OECD, 1998, *Women Entrepreneurs in Small and Medium Enterprises*, OECD Conference Paris 1997, OECD, Paris.
- Osborne, D. and T. Gaebler, 1992, *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*, Reading, MA: Addison-Wesley.
- Parsons, J.E., Meece, J.L., Adler, T.F. and C.M. Kaczala, 1982, Sex differences in attributions and learned helplessness, *Sex Roles* 8, 421-432.
- Perry, C., MacArthur, R. Meredith, G. and B. Cunningham, 1986, Need for achievement and locus of control of Australian small business owner-managers and super-entrepreneurs, *International Small Business Journal* 4, 55-64.
- Praag, M.C. van, 1999, Some classic views on entrepreneurship, *De Economist* 147 (3), 311-335.
- Rosa, P., Carter, S. and D. Hamilton, 1996, Gender as a determinant of small business performance: Insights from a British study, *Small Business Economics* 8 (4), 463-478.
- Rosenthal, P., Guest, D. and R. Peccei, 1996, Gender differences in managers' causal explanations for their work performance: a study in two organizations, *Journal of Occupational and Organizational Psychology* 69, 145-151.

- Rotter, J.B., 1966, Generalized expectancies for internal versus external control of reinforcement, *Psychological Monographs: General and Applied* 80 (1), no. 609.
- Schein, V., 1975, Relationships between sex role stereotypes and requisite management characteristics among female managers, *Journal of Applied Psychology* 60, 340-344.
- Schein, V., 1973, The relationship between sex role stereotypes and requisite management characteristics, *Journal of Applied Psychology* 57, 95-100.
- Schumpeter, J.A., 1934, *The Theory of Economic Development*, Cambridge, MA: Harvard University.
- Sexton, D.L. and N. Bowman-Upton, 1990, Female and male entrepreneurs: psychological characteristics and their role in gender-related discrimination, *Journal of Business Venturing* 5, 29-36.
- Shackle, G.L.S., 1979, *Imagination and the Nature of Choice*, Edinburgh: Edinburgh University Press.
- Sherer, R.F., Brodzinski, J.D. and F.A. Wiebe, 1990, Entrepreneur career selection and gender: a socialization approach, *Journal of Small Business Management* 28 (2), 37-44.
- Sherer, R.F., Adams, J.S., Carley, S.S. and F.A. Wiebe, 1989, Role model performance effects on development of entrepreneurial career preference, *Entrepreneurship Theory and Practice* 13 (3), 53-71.
- Smith, M.B., 1992, William James and the psychology of self. In: M.E. Donnelly (ed.), *Reinterpreting the Legacy of William James*, Washington DC: American Psychological Association, 173-187.
- Smith, K., Gannon, M., Grimm, C. and T. Mitchell, 1988, Decision-making behavior in smaller entrepreneurial and larger professionally managed firms, *Journal of Business Venturing* 3, 223-232.
- Stevenson, H.H. and J.C. Jarillo, 1990, A paradigm of entrepreneurship: entrepreneurial management, *Strategic Management Journal* 11, 17-27.
- Stigter, H.W., 1999, Vrouwelijk ondernemerschap in Nederland 1994-1997, EIM Business and Policy Research, Zoetermeer.
- Stopford, J.M. and C.W.F. Baden-Fuller, 1994, Creating corporate entrepreneurship, *Strategic Management Journal* 15 (7), 521-536.
- Triandis, H.C., 1989, The self and social behavior in differing cultural contexts, *Psychological Review* 96, 506-520.
- U.S. Small Business Administration, 1995, *The Third Millennium: Small Business and Entrepreneurship in the Twenty-First Century*, Washington DC: U.S. Small Business Administration.
- Uxem, F. van and J. Bais, 1996, Het starten van een bedrijf. Ervaringen van 2000 starters, EIM Business and Policy Research, Zoetermeer.
- Vesper, K.H., 1980, *New Venture Strategies*, Englewood Cliffs, NJ: Prentice Hall.
- Vesper, K.H., 1999, Unfinished Business (Entrepreneurship) of the 20th Century, paper presented at the USASBE conference, San Diego, California, January 1999.
- Verheul, I. and A.R. Thurik, 2001, Start-up capital: differences between male and female entrepreneurs: Does gender matter?, *Small Business Economics* 16 (4), 329-345.
- Watkins, J.M. and D.S. Watkins, 1983, The female entrepreneur: her background and determinants of business choice - some British data. In: Hornaday, J.A., J. Timmons and K.H. Vesper (eds.), *Frontiers of Entrepreneurship Research*, Wellesley, MA: Babson College, 271-288.
- Wennekers, A.R.M. and A.R. Thurik, 1999, Linking entrepreneurship and economic growth, *Small Business Economics* 13 (1), 27-55.
- Wohlers, A.J. and M. London, 1989, Ratings of managerial characteristics: evaluation difficulty, co-worker agreement and self-awareness, *Personnel Psychology* 42, 235-261.

Wood, R. and A. Bandura, 1989, Social cognitive theory of organizational management, *Academy of Management Review* 14 (3), 361-384.

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