

GENDER-ROLE ORIENTATION AS A DETERMINANT OF ENTREPRENEURIAL SELF-EFFICACY

STEPHEN L. MUELLER

*Department of Management, College of Business, BEP 455
Northern Kentucky University, Highland Heights, KY 41099, USA
muellers1@nku.edu*

MARY CONWAY DATO-ON

*Crummer Graduate School of Business, Rollins College
1000 Holt Avenue, Winter Park, FL 32789, USA*

Received January 2007

Revised July 2007

Entrepreneurial self-efficacy (ESE) is often included in entrepreneurial intentions models to explain why some individuals are more likely than others to become entrepreneurs. An unsettled question among researchers is whether ESE differs between men and women. While early studies seem to suggest that men have higher ESE than women, more recent studies are inconclusive. Lacking empirical support for gender differences in ESE compels researchers to look for other factors to explain variation in entrepreneurial self-efficacy.

The present study confirms two recent studies by finding no significant difference in ESE between men and women in a representative sample of MBA students. This finding leads to an investigation of gender-role orientation as a possible determinant of differences in entrepreneurial self-efficacy. Results indicate that the relationship between gender-role orientation and entrepreneurial self-efficacy is complex and multifaceted. Early in the venture creation process, the searching and planning tasks demand creativity and innovation where a strong mix of masculine and feminine traits (androgyny) improves performance. Later in the venture creation process, an individual (male or female) with a strong masculine orientation seems better suited for undertaking entrepreneurial tasks associated with persuading and leading others.

Keywords: Entrepreneurial self-efficacy; gender; gender-role orientation; masculine; feminine; androgynous.

1. Introduction

A growing area of entrepreneurship research seeks to identify underlying factors that motivate or encourage individuals to engage in entrepreneurial activity. Some of these factors relate to specific individual differences in family background, education, age, sex, or personal attributes (Krueger and Brazeal, 1994; De Martino and Barbato, 2003; Sequeira *et al.*, 2005; Zhao *et al.*, 2005). Other factors are contextual in nature such as the general economic environment, culture, or local availability of resources to start a business (Shane *et al.*, 1991; Mueller *et al.*, 2002).

Self-efficacy is a psychological state generally defined as possessing self-confidence in performing a specific task. Self-efficacy has received attention in recent years as a key factor in explaining why some individuals are motivated to become entrepreneurs and others are not. More specifically, a number of researchers have examined the role that self-efficacy plays in motivating entrepreneurial action. This line of inquiry into entrepreneurial intentions began with Boyd and Vozikis (1994) who theorized that self-efficacy in performing tasks associated with venture creation was instrumental in motivating an individual to engage in such activities. More recently, Zhao *et al.* (2005) proposed a predictive model of entrepreneurial intentions in which self-efficacy plays a critical mediating role.

Another important path of entrepreneurship research investigates the opportunities and challenges that women face in pursuing entrepreneurship. Although women have made great strides in recent years toward closing the entrepreneurship gap (Buttner and Moore, 1997), concerns persist that women are under-represented among business owners because they lack the same motivations as men when considering entrepreneurship as a career choice (Scherer *et al.*, 1990).

Supporting such concerns, a few studies suggest that men are more likely than women to undertake an entrepreneurial venture (Bonnett and Furnham, 1991; Mueller, 2004). Differences between the sexes may be due, in part, to men having higher levels of confidence in their ability to perform entrepreneurial tasks such as developing a unique and feasible idea for a business, raising venture money and hiring employees. The fundamental reason for a gap between men and women, or so it is argued, is that girls are socialized differently than boys, leading to differences in career aspirations including the desire to be an entrepreneur (Scherer *et al.*, 1990; Mueller, 2004).

On the other hand, it can be argued that times have changed. Dramatic social changes over the last half-century have given rise to modern economically advanced societies for which traditional sex roles and social barriers to historically “male” vocations, including entrepreneurship, are less rigid. Today we would expect that within modern, egalitarian societies such as the United States, differences in entrepreneurial self-efficacy (ESE) between men and women are minimal or non-existence. If a lack of such differences is confirmed empirically, then we must look to factors other than biological sex to explain variation in entrepreneurial self-efficacy among both men and women.

This study is designed to address a series of questions about differences between the sexes with regard to entrepreneurial self-efficacy (ESE). First, in today’s world, are men more likely than women to possess high levels of ESE? Second, are differences in ESE among men and women greater than differences between the sexes? Third, if biological sex *per se* does not explain individual differences in ESE, are there other cognitive factors, such as gender role orientation, that contribute to observed differences in ESE?

In this paper we address the above-stated research questions by first identifying related research on women’s entrepreneurship and ESE. Building on recent entrepreneurial self-efficacy models (e.g., Boyd and Vozikis, 1994; Mueller and Goic, 2003; Zhao *et al.*, 2005), we develop hypotheses about differences in ESE between the sexes and among Bem’s (1974) four categories of gender role orientation. We test these hypotheses using a representative sample of male and female MBA students.

2. Background

Several streams of research contribute to our understanding of differences between men and women in their desire to become entrepreneurs. The first stream addresses differences between men and women with respect to sex role socialization and its effect on career preferences. The second stream addresses the development of a gender role orientation construct and Bem's Sex Role Inventory (1974) measures of femininity, masculinity and androgyny. The third stream addresses factors that give rise to differences between men and women in career self-efficacy generally and entrepreneurial self-efficacy specifically.

2.1. Socialization of women and stereotype sex roles

Women and men have historically assumed different roles in society. Certain jobs have traditionally been considered more appropriate for men and others more appropriate for women (Williams and Best, 1982). Underlying widely-held beliefs in the appropriateness of these conventional sex roles are male and female gender stereotypes. These stereotypes assume patterned differences in the psychological characteristics of males and females. Women, for example, are believed to be more emotional and nurturing than men, while men are believed to be more aggressive and independent than women. These gender stereotypes, when accepted as true, influence the assignment of men and women to different occupational roles (Williams and Best, 1982; Williams *et al.*, 1999).

Research on sex role stereotypes suggests that the traits ascribed to men form a cluster of related behaviors interpreted as reflecting competence and the ability to "get things done." These traits include independence, active, objective, confident, ambitious, assertive and logical. Traits traditionally ascribed to women include gentle, emotional, interpersonally sensitive and tactful. These traits form a cluster interpreted as reflecting warmth and expressiveness. The resulting stereotyping pattern is such that occupations associated with higher levels of rationality and assertiveness are viewed as masculine occupations. On the other hand, occupations associated with dependency, passivity, nurturing and interpersonal warmth are perceived as feminine occupations (Sinar, 1975). Examples of occupations perceived as "masculine" include law enforcement, engineering and architects. Occupations perceived as "feminine" include nursing, elementary school teacher and flight attendant. Occupations perceived as "neutral" include school principal, psychologist, pharmacist and veterinarian (Sinar, 1975; Couch and Sigler, 1988).

Occupational (and gender-role) stereotyping comes about through cultural conditioning and the socialization of men and women. According to Chodorow (1978), females at an early age are taught relational and empathetic skills and their identities are forged within the family relationship. In contrast, males are encouraged to develop independence and organizational skills (Chodorow, 1978). Empirical research on socialization generally supports the proposition that females are more cooperative, more empathetic and emphasize interpersonal relationships much more than males (Kelly, 1991).

Research has found that men and women differ in their motives and preferences for self-employment (Scherer *et al.*, 1990; Buttner and Moore, 1997; De Martino and Barbato, 2003), a particular job or occupation (Bigoness, 1988) or a profession (Valian, 1998). In the

case of self-employment, most men and women share the desire for independence (Sexton and Bowman, 1986, 1990; Shane *et al.*, 1991). However, their priorities tend to differ significantly. Women generally are more focused on balancing work and family, while men are more motivated to gain wealth through business ownership (Buttner and Moore, 1997; De Martino and Barbato, 2003).

2.2. Gender-role orientation

Gender (or sex) role orientation is a personal trait or attribute conditioned by a traditional social system in which men are expected to think and behave as men (masculine) and women are expected to think and behave as women (feminine). Within such a social system, some behaviors, roles and careers are stereotyped as *masculine* while others are stereotyped as *feminine* (Williams and Best, 1982).

Masculinity (also called *instrumentality*) is a cognitive focus on “getting the job done.” Instrumental behaviors and attitudes that are stereotyped as *masculine* include assertiveness, competitiveness, independence and aggressiveness. Femininity (also called *expressiveness*) is an affective concern for the welfare of others and the harmony of the group. Expressive behaviors and attitudes that are stereotyped as *feminine* include submissiveness, dependence, deference, cooperation, caring and nurturing (Constantinople, 1973; Spence and Helmreich, 1980; Bem, 1981; Williams and Best, 1982).

Constantinople (1973) developed a theoretical framework in which similarities between men and women, as well as individual differences among men and among women could be empirically investigated. Within this framework, Constantinople (1973) conceptualized male and female sex-roles as independent constructs rather than opposite ends of a unidimensional continuum. From this conceptualization, a new non-traditional view of *gender* as socially constructed rather than biologically-determined was developed (Bristor and Fischer, 1993; Lorber, 1994).

Bem (1974) built on Constantinople’s conceptualization of masculinity and femininity as independent dimensions of gender role orientation with the development of an instrument known as BSRI (Bem’s Sex Role Inventory). Under the BSRI method, individuals are classified into one of four categories based on answers to a 34-item Likert-type scale. Individuals who score high on masculinity and low on femininity are classified as *masculine*. Similarly, individuals are classified as *feminine* if they score high on femininity and low on masculinity. Individuals that score high on both masculinity and femininity are classified as *androgynous* and those scoring low on both are classified as *undifferentiated*.

Gender-role orientation, along with the BSRI classification system, has been widely studied in management literature to explain variation among individuals in career self-efficacy (Choi, 2004), leadership style/effectiveness (Kent and Moss, 1994) and managerial ethics (McCabe *et al.*, 2006). The findings of empirical research on gender-role orientation suggest that androgynous individuals have similar chances of emerging as leaders as masculine individuals (Kent and Moss, 1994) and have stronger understanding of managerial ethics (McCabe *et al.*, 2006). As a general rule, androgynous and masculine individuals exhibit more desirable psychological traits, including higher self-concept (Flaherty and

Dusek, 1980), higher self-esteem (Allgood-Meten and Stockard, 1991) and higher career self-efficacy (Matsui and Onglatco, 1991).

2.3. Entrepreneurial self-efficacy

The concept of *self-efficacy* is derived from social learning theory and refers to a person's belief in his or her capability to perform a particular task (Bandura, 1977). More specifically, self-efficacy has been defined as "... belief in one's capabilities to mobilize the motivation, cognitive resources and courses of action needed to meet given situational demands ..." (Wood and Bandura, 1989). Self-efficacy is based upon past experience and anticipation of future obstacles. It affects one's beliefs about whether or not specific goals are attainable (Gist and Mitchell, 1992). If self-efficacy is low, an individual will not act, even if there is a perceived social approval for that behavior (Boyd and Vozikis, 1994).

Career Self-efficacy. Hackett and Betz (1981) proposed that self-efficacy be included in models of career development and career choices of both men and women (Lent and Hackett, 1987). Hackett and Betz believed that extending self-efficacy theory to the career domain could explain how personal efficacy expectations might develop differently in women and men. Career self-efficacy differences, they argued, are based in large part on differential gender-role socialization and resultant differential access to Bandura's (1977) four sources of efficacy information (Lent and Hackett, 1987). They further contend that these socialization-based differences between men and women in self-efficacy for traditionally male and female careers is a primary factor for explaining women's under-representation in many male-dominated careers (Hackett and Betz, 1981).

In the first empirical study of career self-efficacy, Hackett and Betz (1981) examined gender differences in self-efficacy with regard to job duties of 10 traditionally male and 10 traditionally female occupations (Holland, 1985). They found that men's self-efficacy was generally equal across traditionally male and female occupations, but that women's self-efficacy was significantly higher for traditionally female occupations and significantly lower for male-dominated occupations (Hackett and Betz, 1981).

In later studies, other researchers confirmed Hackett and Betz findings. Layton (1984) found that among women, self-efficacy for traditionally female occupations was significantly higher than for traditionally male occupations. Clement (1987) found that female university students displayed lower self-efficacy than their male counterparts for nine of 10 traditional male occupations. However the male students did not lack self-efficacy in relation to the majority of the traditionally female occupations (Clement, 1987).

Entrepreneurial Self-efficacy. Several entrepreneurship theorists have proposed that self-efficacy plays an influential role in the new venture creation process (Boyd and Vozikis, 1994; Scherer *et al.*, 1989). Boyd and Vozikis for example, proposed that self-efficacy influences the development of entrepreneurial intentions and hence the probability of venture creation. They argue that one's intention to start a venture is formed in part by his or her perception about the outcome anticipated — i.e., will the venture succeed or fail? Few people form intentions about engaging in entrepreneurial activities if they believe there is a high probability of failure. By extension, a person will have the intention to create a

new venture or act upon an existing entrepreneurial intention, only when self-efficacy is high in relation to the perceived requirements of a specific opportunity (Boyd and Vozikis, 1994).

Entrepreneurial self-efficacy develops over time and is influenced by a number of external and internal factors such as upbringing, economic circumstances, personality and values (Cox *et al.*, 2002). Entrepreneurial self-efficacy (ESE) is also affected by national or regional context to the extent that opportunities for gaining confidence through experience and role modeling are prevalent, thereby enhancing ESE, or limited, thereby reducing ESE (Mueller and Goic, 2003).

Entrepreneurial self-efficacy can be a useful measure of the strength of an individual's belief that he or she is capable of successfully performing the tasks of an entrepreneur. However, identifying specific entrepreneurial tasks is challenging since entrepreneurship is not a single task but rather a mix and sequence of tasks related to creating and growing a new business venture (De Noble *et al.*, 1999; Mueller and Goic, 2003).

Entrepreneurial Tasks. Several studies have attempted to define entrepreneurial tasks as a basis for measuring ESE (Chen *et al.*, 1998; De Noble *et al.*, 1999; Mueller and Goic, 2003; Sequeira *et al.*, 2005). Mueller and Goic, for example, defined entrepreneurial tasks within a "process model" framework that separates entrepreneurial activities into four discrete steps or phases. The first step involves the development by the entrepreneur of a unique idea and/or identification of a special opportunity drawing upon the entrepreneur's creative talents and the ability to innovate. The second step consists of activities by which the entrepreneur converts the idea into a feasible business plan that addresses issues such as market size, business location, product specifications, start-up costs, operating costs and identification of resources required to sustain growth. The third step involves assembling the required resources to bring the venture into existence such as capital, labor, customers and suppliers. During the fourth step, the entrepreneur must act as an executive-level manager by engaging in strategic planning, managing various business relationships, applying sound management practices and solving problems quickly and efficiently (Mueller and Goic, 2003).

3. Hypotheses

Entrepreneurial self-efficacy (ESE) is widely viewed as a predictor of entrepreneurial intentions and behavior (Boyd and Vozikis, 1994; Krueger and Brazeal, 1994; Scherer *et al.*, 1989; Chen *et al.*, 1998; Sequeira *et al.*, 2005; Zhao *et al.*, 2005). Concern for the underrepresentation of women as entrepreneurs over the past several decades (Buttner and Moore, 1997) has led researchers to ask whether lower ESE among women compared to men might be a contributing factor (Scherer *et al.*, 1990; Dyer, 1994).

By viewing entrepreneurship as a career choice, some researchers have speculated that women are less confident than men about their ability to start a business because they have fewer early career experiences. Furthermore, they lack the same social support and entrepreneurial role models available to men (Bowen and Hisrich, 1986; Scherer, *et al.*, 1990; Brush, 1992; Matthews and Moser, 1996; Buttner and Moore, 1997; Kourilsky and Walstad, 1998).

Hackett and Betz's (1981) model of career self-efficacy also serves as a basis for suggesting that men have higher self-efficacy in performing entrepreneurial tasks than do women. Gender-role stereotypes, transmitted to women via socialization experiences, pose psychological barriers to career choice and achievement. As a result, women may develop strong efficacy beliefs for traditionally female occupations or activities and weak beliefs regarding their ability to succeed at male-dominated career paths and occupations. (Betz and Hackett, 1981; Clement 1987; Lent and Hackett, 1987; Nevill and Schlecker, 1988).

As noted earlier, careers and occupations evolved as *male-dominated* through the process of sex-role stereotyping and cultural conditioning. Even today, both men and women perceive certain tasks as appropriate for men largely due to the nature of the job (Hosada and Stone, 2000). Is the job physically demanding? Does it require assertiveness and control over others? To be successful on the job, does one need to be highly competitive, bold, or even brave? If so, then the job assumes an instrumental or "masculine" nature (Sinar, 1975; Williams and Best, 1982; Matsui, 1994).

The job of being an entrepreneur, or so it is perceived, is also "masculine" in nature. Recent findings indicate that both men and women perceive entrepreneurs to be more assertive, achievement oriented and confident than managers and to have greater risk-taking propensity (Baron *et al.*, 2001). Combining the effects of socialization differences between men and women, sex-role stereotyping and factors determining career self-efficacy, we hypothesize that:

H1: Males express higher levels of entrepreneurial self-efficacy than females.

Gender role orientation as described by Bem (1981) and others (Spence and Helmreich, 1980; Matsui, 1994) is a psychological orientation determined by an individual's personal attitudes, values and self-concept — not by biological sex. Nevertheless, sex does matter. In most societies, men and women are socialized differently, such that men tend to be instrumental in attitudes, behavior and orientation while women tend to be expressive. Therefore, we hypothesize that:

H2: Males are most likely to exhibit a stereotypical masculine orientation and least likely to exhibit a stereotypical feminine orientation.

H3: Females are most likely to exhibit a stereotypical feminine orientation and least likely to exhibit a stereotypical masculine orientation.

Given the rising interest in entrepreneurial self-efficacy and entrepreneurship among women, it is surprising that few empirical studies have been undertaken to determine if ESE is actually higher among men than women. As noted earlier, initial empirical support for differences between men and women in ESE was reported by Scherer *et al.* (1990). Within a sample of undergraduate business students at a US university, Scherer *et al.* (1990) found that males perceived a greater degree of competency for performing tasks associated with owning and managing a business than females. However, more recent studies do not confirm these findings. Zhao *et al.* (2005) found that gender was not significantly related to entrepreneurial self-efficacy among a broad sample of MBA students at five US universities.

Sequeira *et al.* (2005) found no differences in ESE between males and females in a sample of nascent entrepreneurs.

These more recent studies seem to suggest that times have changed over the past 15 years. In fact, advancement in entrepreneurship among women has been dramatic. National statistics show that over the past decade, women initiated new businesses at twice the rate of men (National Women's Foundation, 2004). It has also been estimated that 10.6 million businesses in the US are at least 50 percent female owned, representing 48 percent of all privately held businesses (Small Business Administration, 2004).

Rapid growth in entrepreneurship among women means that there are now far more female role models and mentors than there were just a decade ago. For business ownership, as for many other traditional male occupations and professions, sex-role stereotypes are fading as women enter these fields in greater proportion. At the same time, the nature of these formerly male-dominated occupations has not changed. Success at starting and growing a business is still perceived as requiring assertiveness, competitiveness, boldness and risk-taking — whether the entrepreneur is a man or a woman (Baron *et al.*, 2001).

This change in gender-mix of entrepreneurs suggests that perhaps gender-role orientation (Spence and Helmreich, 1980; Bem, 1981) matters more than biological sex in determining an individual's self-efficacy in performing entrepreneurial tasks. According to Holland (1973, 1985), the demands of an "enterprising" occupational environment, such as starting and growing a new venture, require *instrumental* qualities including the manipulation of others to attain organizational goals, a focus on getting the job done and assertiveness.

Studies have shown that instrumental qualities (as well as expressive qualities) are observable to varying degrees in both men and women (Bem, 1981). Bem's BSRI categorization scheme identifies four possible gender-role orientations: *stereotypical masculine* (high instrumentality, low expressiveness), *stereotypical feminine* (low instrumentality, high expressiveness), *androgyny* (high instrumentality, high expressiveness) and *undifferentiated* (low instrumentality, low expressiveness). Other studies have established a positive link between instrumentality and general self-efficacy (Choi, 2004) and between instrumentality and career self-efficacy for male-dominated occupations (Matsui, 1994). Given the demands of starting and growing a new venture, we hypothesize that:

H4: Among both males and females, a stereotypical masculine orientation is associated with higher levels of entrepreneurial self-efficacy than a stereotypical feminine orientation.

The term *androgyny* applies to individuals possessing both stereotypical masculine and feminine traits (Bem, 1974). Androgyny provides certain advantages in that androgynous people have the ability to effectively utilize behavior that is both instrumental and expressive, both assertive and yielding, and both feminine and masculine (Jonsson and Carlsson, 2000). Reported benefits of androgyny include high self-esteem (Mullis and McKinley, 1989), achievement motivation (Spence and Helmreich, 1978), a feeling of well-being (Lubinski *et al.*, 1981) and more adaptive or flexible behavior (Carter, 1985; Vonk and Ashmore, 1993).

This last set of qualities, adaptability and flexibility, are essential to success at performing many entrepreneurial tasks. During the process of new venture creation, an entrepreneur faces an uncertain and constantly changing environment. Plans change, prototypes fail,

potential investors back out, business partners quit, interest rates rise, and new competitors appear. The entrepreneur must be adaptive, flexible and resilient. Some situations call for masculine qualities such as assertiveness (e.g., when an outside investor is demanding too large a share of the company). On the other hand, some situations require feminine qualities such as caring and patience (e.g., when a business partner needs time away from the venture to deal with family problems). Thus, we hypothesize that:

H5: Among both males and females, an androgynous orientation is associated with higher levels of entrepreneurial self-efficacy than a stereotypical feminine orientation.

Androgyny has also been linked to creativity. Specifically, several studies show that individuals with an androgynous orientation are more likely to engage in creative activities and demonstrate a higher level of creative skills than either stereotypical masculine individuals or stereotypical feminine individuals (Norlander *et al.*, 2000; Jonsson and Carlsson, 2000).

Creativity and innovation have long been associated with entrepreneurship. In fact, innovative activity is explicit in Schumpeter's (1934) description of the entrepreneur. As *innovator*, the successful entrepreneur must adopt and implement competitive strategies such as introducing new products and services, developing new methods of production, or opening new markets. Prior to implementation, however, the entrepreneur must be able to formulate such strategies effectively suggesting the possession of personal characteristics that reflect creativity (Mueller and Thomas, 2001).

Some entrepreneurial tasks require more creativity than others. During the *searching* phase of the new venture creation process, the entrepreneur applies creative skills to developing a novel idea for a business, inventing a new product or service, uncovering a hidden market opportunity, or envisioning a unique approach to satisfy the needs of the marketplace. Thus we hypothesize that:

H6: Among both males and females, higher levels of self-efficacy for the searching- phase entrepreneurial tasks are associated with an androgynous orientation compared to a stereotypical masculine orientation.

4. Methods

4.1. Sample

A self-administered questionnaire was given to 216 MBA students at two Midwestern universities. The sample consisted of 89 females (41 percent) and 126 males (59 percent) who completed the survey in a classroom setting. The median age was 29, with 88 percent of the respondents born in the US. Thirteen percent of respondents have started a business at some time in their lives though only 11 percent currently own a business. Fifty percent of respondents reported that a family member owned a business.

4.2. Measures

Entrepreneurial Self-Efficacy. Sequeira *et al.* (2005) identified 75 entrepreneurial tasks from which they developed a 60-item Likert-type scale for measuring ESE. To streamline the survey administration process, we reduced the number of items to 20.

Respondents were asked to assess their self-efficacy with regard to each of the 20 entrepreneurial tasks. They were given the following general instructions: “Envision that you have an opportunity to start your own business. Using the following scale, please rate yourself on your level of confidence in completing the tasks listed below.” The scale was anchored by 1 = “I have no confidence in my ability to...” and 6 = “I have complete confidence in my ability to...”

Following Mueller and Goic (2003), we assigned each of the 20 items to one of four categories representing a related set of entrepreneurial tasks associated with each phase of the new venture creation process. The first set of tasks (searching) is associated with idea generation and the search for opportunities. The second set of tasks (planning) involves the development of a comprehensive business plan that includes detailed market, financial and operational analysis. The third set of tasks (marshaling) relates to the acquisition of resources needed to launch the business successfully. Tasks in the fourth set (implementing) are managerial tasks such as directing organizational activities and decision-making.

Factor analysis and reliability analysis (Cronbach’s alpha) was conducted to confirm the validity of a four-factor ESE model. Analysis revealed that two items related to estimating market size were ambiguous and did not clearly load on any one factor. These two items were removed leaving 18 items across four factors. Table 1 shows factor loading and Cronbach’s alpha reliability score for each item.

Gender. Bem’s (1974) BSRI scale was used to measure gender-role orientation. As anticipated, factor analysis results confirm two factors: masculinity and femininity. Both factors have strong reliability with a Cronbach alpha score of 0.882 for masculinity and 0.833 for femininity. A median split method was used to divide respondents into one of four gender-role orientation categories: masculine, androgynous, feminine and undifferentiated. For these data, the mean masculinity and femininity scores were 4.43 and 4.02 respectively. Respondents with a masculinity score above 4.43 and a femininity score above 4.02 were categorized as androgynous ($N = 45$). Respondents with a masculinity score above 4.43 and a femininity score below 4.02 were categorized as masculine ($N = 56$). Respondents with a masculinity score below 4.43 and a femininity score above 4.02 were categorized as feminine ($N = 62$). Respondents with a masculinity score below 4.43 and a femininity score below 4.02 were categorized as undifferentiated ($N = 44$).

4.3. Results

To determine the effect of sex on entrepreneurial self-efficacy, ESE scores of male students were compared to ESE scores of female students. Differences between the means were computed for each of the four ESE measures as well as for a composite measure of ESE. Table 2 summarizes the results. As indicated, there were no statistically significant differences between males and females ($p > 0.05$) in terms of ESE for searching tasks, planning tasks, marshaling tasks or implementing tasks. Combining these four measures into a single composite measure of ESE did not alter the results. These negative results held whether individuals who started and/or currently own a business were included or not. Thus, Hypothesis 1 (males express higher levels of ESE than do females) is not supported.

Table 1. Factor analysis of entrepreneurial self-efficacy scales.

Item	Factor Loading				Scale Alpha = 0.869
	Searching	Planning	Marshalling	Implementing	Factor Alpha
Identify the need for a new product or service	0.836				
Recognize a business opportunity before others do	0.805				
Invent a new product or service	0.749				
Develop ways to improve a product or service	0.630				
Investigate the market for a new product or service	0.593				0.818
Organize and maintain the financial records of my business		0.843			
Accurately estimate the necessary revenues and costs associated with my business		0.819			
Prepare projected (pro-forma) financial statements such as balance sheets, income statements and cash flows for a new business		0.816			
Accurately estimate the amount of start-up funds and working capital necessary to start my business		0.721			0.852
Persuade professional investors (e.g. venture capitalists) to invest in my business			0.850		
Find individuals with the necessary capital to fund my business			0.724		
Gain the confidence and trust of people who do not know me very well			0.687		
Persuade formal leading institutions (e.g. banks) to loan money to my business			0.646		
Persuade friends or family members to invest in my business			0.634		0.839
Supervise employees				0.841	
Recruit and hire employees				0.805	
Inspire, encourage and motivate my employees				0.800	
Manage the business without guidance or advice from others				0.624	0.816

Table 2. ESE differences between males and females (H1).

Task phase	ESE mean scores		Difference between means
	Males n = 126	Females n = 86	
Searching	20.28	19.18	1.10 ^a
Planning	16.66	16.11	0.55 ^a
Marshaling	19.72	19.94	-0.22 ^a
Implementing	18.66	18.64	0.02 ^a
Composite	82.82	81.43	1.39 ^a

^aNot statistically significant ($p > 0.05$).

Table 3. Sex and gender-role orientation (H2 and H3).

Gender-Role Orientation	Percentage of	Percentage of
	Males n = 123	Females n = 84
Masculine	34.1	16.7
Feminine	16.3	50.0
Androgynous	26.0	15.5
Undifferentiated	23.6	17.8

Table 3 provides a cross-tabulation of sex and gender-role orientation of respondents. As shown, 34.1 percent of male respondents were categorized as masculine while 50 percent of female respondents were categorized as feminine. Conversely, only 16.3 percent of males were categorized as feminine and 16.7 percent of females were categorized as masculine. Supporting Hypothesis 2, results show that males in this sample were most likely to have a masculine gender-role orientation and least likely to have a female gender-role orientation. However, Hypothesis 3 was only partially supported. While females in this sample were (by a significant margin) most likely to have a feminine gender-role orientation (50 percent), they were just as likely to be undifferentiated (17.8 percent) or androgynous (15.5 percent) as masculine (16.7 percent).

Table 4 provides an analysis of ESE differences among the three gender-role orientation categories on a pair-wise basis. To test Hypothesis 4, the stereotypical masculine group is compared to the stereotypical feminine group. To test Hypotheses 5 and 6, the androgynous group is compared to the stereotypical feminine group and to the stereotypical masculine group.

Support for Hypothesis 4 and Hypothesis 5 depends on which ESE measure is used as the basis for comparison. In support of Hypothesis 4, the stereotypical masculine group exhibits a statistically significant higher level of ESE *vis-à-vis* the stereotypical feminine group when ESE is measured in terms of marshaling or implementing tasks. On the other hand, there is no statistically significant difference between the two groups when ESE is measured in terms of searching or planning tasks. In support of Hypothesis 5, the androgynous group exhibits a statistically significant higher level of ESE *vis-à-vis* the stereotypical feminine group when ESE is measured in terms of searching, planning, or implementing tasks, but not for marshaling tasks.

Table 4. ESE differences between gender-role orientation categories (H4, H5, H6).

Task phase	ESE sample means			Differences between sample means		
	Masculine (M)	Feminine (F)	Androgynous (A)	M – F [H4]	A – F [H5]	A – M [H6]
Searching	19.56	19.14	21.71	0.42	2.57**	2.15*
Planning	16.42	15.14	17.01	1.28	1.87*	0.59
Marshaling	21.24	19.12	20.46	2.12*	1.35	-0.77
Implementing	19.62	17.74	19.99	1.88**	2.25**	0.38
Composite	84.77	78.36	87.36	6.41*	8.99**	2.59

*Significant at 0.05.

**Significant at 0.01.

In support of H6, the androgynous group exhibits a statistically significant higher level of ESE *vis-à-vis* the stereotypical masculine group when ESE is measured in terms of creativity-related tasks such as searching, but not for tasks with less creative demand such as planning, marshaling and implementing.

5. Discussion

While the earlier study by Scherer *et al.* (1990) found men to have higher entrepreneurial self-efficacy than women, more recent studies (Zhao *et al.*, 2005; Sequeira *et al.*, 2005) did not support the findings. The results of our study confirm these more recent findings. We found no statistically significant difference in ESE between men and women in a representative sample of MBA students. This lack of difference in ESE between the sexes held true regardless of the measure used (see Table 2). Although not particularly surprising or remarkable, our finding of “no difference” between men and women in ESE is important evidence in support of the argument that times are changing. Today, one’s gender (male or female) is no longer a reliable predictor of entrepreneurial self-efficacy.

However, gender stereotypes and socially-conditioned perceptions of what it means to be “masculine” or “feminine” persist. We found that of the four possible gender-role orientations, men are most likely to have a stereotypical masculine orientation and women are most likely to have a stereotypical feminine orientation. An androgynous orientation is also quite prevalent among males (ranked second at 26 percent), but the likelihood of a stereotypical feminine orientation among males is lowest at 16.3 percent. Among females, the likelihood of an androgynous orientation is low (15.5 percent) as is the likelihood of a stereotypical masculine orientation (see Table 3).

The hypothesis that ESE is higher among individuals (regardless of biological sex) with a stereotypical masculine orientation than among individuals with a stereotypical feminine orientation is supported for marshaling and implementing tasks but not for searching and planning tasks. Hypothesis 4 is also supported when ESE is treated as composite measure (see Table 4).

This seemingly “mixed” result with respect to masculine orientation and higher ESE demonstrates the importance of separating entrepreneurial tasks into sub-categories aligned with phases of the venture creation process. Conceptualizing entrepreneurship as a singular

task and measuring ESE accordingly obfuscates the multifaceted and changing nature of the job. As the nature of entrepreneurial tasks changes, so do the skills required to perform these tasks. During the marshaling and implementing phases of the venture creation process, the nascent entrepreneur must demonstrate strong leadership skills and the ability to influence resource providers such as investors, bankers, suppliers and employees. The ability to persuade and inspire others, along with expression of self-confidence and self-assurance, enhances success at motivating others to get things done. Given the “instrumental” nature of tasks associated with the marshaling and implementing phase of the venture creation process, advantage goes to individuals with a stereotypical masculine gender-role orientation as the results of our study suggest.

On the other hand, tasks during the searching and planning phases of the venture creation process do not make strong “people-related” or leadership demands on the nascent entrepreneur. Coming up with the idea, identifying market opportunities and planning the business are essentially solo activities requiring little interaction with other people. As a result, little advantage is given to an individual with a stereotypical masculine orientation when performing tasks associated with the searching and planning phases.

In support of Hypothesis 5, we found entrepreneurial self-efficacy to be higher among individuals with an androgynous gender-role orientation than among individuals with a feminine gender-role orientation. A positive relationship between ESE and androgyny was statistically significant for task associated with the searching, planning and implementing phases of the venture creation process, but not for tasks associated with the marshaling phase (see Table 4).

Having an androgynous gender-role orientation was found to be advantageous in the development of self-efficacy for general tasks (Choi, 2004), for some careers (Matsui and Onglatco, 1991) and for creative tasks (Jonsson and Carlsson, 2000). The results of our study are consistent with these prior studies in that we found an ESE advantage for nascent entrepreneurs with an androgynous orientation. For three of the four entrepreneurial task phases (as well as the composite measure of ESE), individuals with an androgynous orientation had higher ESE than individuals with either a masculine or a feminine orientation (see Table 4).

Androgyny was found to be particularly beneficial in raising the level of ESE for creative tasks such as those required during the searching phase of the venture creation process. In support of Hypothesis 6, self-efficacy for searching tasks was higher among individuals with an androgynous gender-role orientation than among individuals with a stereotypical masculine gender-role orientation. The same was not true for the less creative tasks during the planning, marshaling and implementing phases.

6. Conclusions

We found that sex *per se* does not affect self-efficacy for any of the four phases of entrepreneurial tasks. On the other hand, gender-role orientation clearly does. However, we found the relationship between gender-role orientation and self-efficacy for performing

entrepreneurial tasks to be complex and multifaceted. While the entrepreneur generally operates in a demanding “enterprising” task environment *a la* Holland (1985), not all tasks are instrumental or “masculine” in nature. Some require expressive or “feminine” qualities. Moreover, demands on the entrepreneur change over time. Early in the venture creation process, the searching and planning tasks demand creativity and innovation where a strong mix of masculine and feminine traits (androgyny) improves performance. Later in the venture creation process, an individual (male or female) with a strong masculine orientation seems better suited for undertaking entrepreneurial tasks associated with persuading and leading others.

Study limitations. Using MBA students as a sample for a study of this nature provides certain advantages. The sample is convenient to access and survey response rate is high with strict control over survey administration. Using a sample that is relatively homogenous with respect to age and education level also eliminates the need to control for these particular demographic variables that may independently explain individual differences in ESE. However, sampling only MBA students also limits the generalizability of our findings to other populations. Clearly the demographic profile of a typical MBA student is quite different from that of someone drawn randomly from the general population. MBA students tend to be (on average) younger, better educated and of higher social-economic background than their counterparts in the general working adult population. As a result, we would expect to find less difference between male and female MBA students in terms of gender-role orientation and ESE than between males and females in the general population. Future studies, using a broader and more diverse sample in terms of age, education, ethnicity and social-economic background, may reveal greater ESE differences between men and women than was found among MBA students.

At best, the results of our study apply to a progressive, egalitarian, Anglo-American society but may have little relevance with respect to Asian, European or Latin American cultures. For comparison, future research on gender-role orientation and entrepreneurial self-efficacy should be widened to include sample populations from other countries and cultures.

Contribution to theory and practice. To our knowledge, this study is the first to apply the concept of gender-role orientation to explain individual differences in entrepreneurial self-efficacy. While prior studies struggled to explain gender differences in ESE or a lack thereof, we have taken a more parsimonious approach by modeling gender-role orientation as a primary determinant of ESE instead of gender. Furthermore, this approach to the study of entrepreneurial self-efficacy seems more appropriate within the context of modern social realities and changes in the gender-mix of entrepreneurs.

The results of this study also have implications for entrepreneurship education as well as public policy and the practice of small business consulting. By clearly identifying the fundamental skills that are needed during each phase of the venture creation process, entrepreneurship training, education programs and consulting services can be targeted toward improvement in these skills to effectively raise entrepreneurial self-efficacy in both men and women.

References

- Allgood-Meten, B and J Stockard (1991). Sex role identity and self-esteem: A comparison of children and adolescents. *Sex Roles*, 25, 129–139.
- Bandura, A (1977). *Self-Efficacy: The Exercise of Control*. New York: Freeman Press.
- Baron, RA, GD Markman and A Hirska (2001). Perceptions of women and men as entrepreneurs: Evidence for differential effects of attributional augmenting. *Journal of Applied Psychology*, 86, 923–929.
- Bem, SL (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42, 155–162.
- Bem, SL (1981). *A Manual for the Bem Sex Role Inventory*. Palo Alto, CA: Consulting Psychologist Press.
- Betz, NE and G Hackett (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counseling Psychology*, 28, 399–410.
- Bigoness, W (1988). Sex differences in job attribute preferences. *Journal of Organizational Behavior*, 9, 139–147.
- Bonnett, C and A Furnham (1991). Who wants to be an entrepreneur? A study of adolescents interested in a Young Enterprise scheme. *Journal of Economic Psychology*, 12(3), 465–478.
- Bowen, DD and RD Hisrich (1986). The female entrepreneur: A career development perspective. *Academy of Management Review*, 11(2), 393–407.
- Boyd, NG and GS Vozikis (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63–77.
- Bristor, JM and E Fischer (1993). Feminist thought: Implications for consumer research. *Journal of Consumer Research*, March, 518–536.
- Brush, CG (1992). Research on women business owners: Past trends, a new perspective and future directions. *Entrepreneurship Theory and Practice*, 16(4), 5–30.
- Buttner, EH and DP Moore (1997). Women's organizational exodus to entrepreneurship: Self-reported motivations and correlates with success. *Journal of Small Business Management*, 35(1), 34–46.
- Carter, DB (1985). Relationships between cognitive flexibility and sex role orientation in young adults. *Psychological Reports*, 57, 763–766.
- Chen, CC, PG Greene and A Crick (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13, 295–317.
- Chodorow, N (1978). *The reproduction of mothering*. Berkeley, CA: University of California Press.
- Choi, N (2004). Sex role group differences in specific, academic, and general self-efficacy. *Journal of Psychology*, 138(2), 149–159.
- Clement, S (1987). The self-efficacy expectations and occupational preferences of females and males. *Journal of Occupational Psychology*, 60, 257–265.
- Constantinople, A (1973). Masculinity-femininity: An exception to the famous dictum? *Psychological Bulletin*, 80, 389–407.
- Couch, JV and JN Sigler (1988). Gender perception of professional occupations. *Psychological Reports*, 88, 693–698.
- Cox, LW, SL Mueller and SE Moss (2002). The impact of entrepreneurship education on entrepreneurial self-efficacy. *International Journal of Entrepreneurship Education*, 1(2), 229–247.
- De Martino, R and R Barbato (2003). Differences between women and men MBA entrepreneurs: Exploring family flexibility and wealth creation as career motivators. *Journal of Business Venturing*, 18(6), 815–833.
- De Noble, A, D Jung and S Ehrlich (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of Entrepreneurship Research*, Babson College, Boston, MA.

- Dyer, WG (1994). Toward a theory of entrepreneurial careers. *Entrepreneurship Theory and Practice*, 19(2), 7–21.
- Flaherty, FF and JB Dusek (1980). An investigation of the relationship between psychological androgyny and components of self-concept. *Journal of Personality and Social Psychology*, 38, 984–992.
- Gist, ME and TR Mitchell (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, 17, 83–211.
- Hackett, G and NE Betz (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, 18, 326–339.
- Holland, JL (1973). *Making Vocational Choices: A Theory of Careers*. New York: Prentice-Hall.
- Holland, JL (1985). *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments*, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall.
- Hosada, M and DL Stone (2000). Current gender stereotypes and their evaluative content. *Perceptual and Motor Skills*, 90, 1283–1294.
- Jonsson, P and I Carlsson (2000). Androgyny and creativity: A study of the relationship between a balanced sex-role and creative functioning. *Scandinavian Journal of Psychology*, 41(4), 269–274.
- Kelly, RM (1991). *The Gendered Economy*. Newbury Park, CA: Sage Publications.
- Kent, RL and SE Moss (1994). Effects of sex and gender role on leader emergence. *Academy of Management Journal*, 37(5), 1335–1346.
- Kourilsky, ML and WB Walstad (1998). Entrepreneurship and female youth: Knowledge, attitudes, gender differences, and educational practices. *Journal of Business Venturing*, 13, 77–88.
- Krueger, NF, Jr and DV Brazeal (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, 18(3), 91–104.
- Layton, PL (1984). *Self-Efficacy, Locus of Control, Career Salience, and Women's Career Choice*. Unpublished doctoral dissertation, University of Minnesota.
- Lent, RW and G Hackett (1987). Career self-efficacy: Empirical status and future directions. *Journal of Vocational Behavior*, 30, 347–382.
- Lorber, J (1994). *Paradoxes of Gender*. New Haven: Yale University Press.
- Lubinski, D, A Tellegen and JN Butcher (1981). The relationship between androgyny and subjective indicators of emotional well-being. *Journal of Personality and Social Psychology*, 40, 722–730.
- Matthews CH and SB Moser (1996). A longitudinal investigation of the impact of family background and gender on interest in small firm ownership. *Journal of Small Business Management*, 34(2), 29–43.
- Matsui, T (1994). Mechanisms underlying sex differences in career self-efficacy expectations of university students. *Journal of Vocational Behavior*, 45, 177–184.
- Matsui, T and ML Onglatco (1991). Instrumentality, expressiveness, and self-efficacy career activities among Japanese working women. *Journal of Vocational Behavior*, 39, 241–250.
- McCabe, AC, WR Ingram and M Conway Dato-on (2006). The business of ethics and gender. *Journal of Business Ethics*, 64(2), 101–116.
- Mueller, SL (2004). Gender gaps in potential for entrepreneurship across countries and cultures. *Journal of Developmental Entrepreneurship*, 9(3), 199–220.
- Mueller, SL and S Goic (2003). East-West differences in entrepreneurial self-efficacy: Implications for entrepreneurship education in transition economies. *International Journal of Entrepreneurship Education*, 1(4), 613–632.
- Mueller, SL and AS Thomas (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, 16(1), 51–75.
- Mueller, SL, AS Thomas and AM Jaeger (2002). National entrepreneurial potential: The role of culture, economic development, and political history. *Advances in International Management*, 14, 221–257.

- Mullis, RL and K McKinley (1989). Gender-role orientation of adolescent females: Effects on self-esteem and locus of control. *Journal of Adolescent Research*, 4, 506–516.
- National Women's Foundation (2004). Capturing the impact: Women-owned businesses in the United States Center for Women's Business Research [www.nfwbo.org/pressreleases/nationalstate-trends/capturingtheimpact.htm].
- Nevill, DD and DI Schlecker (1988). The relation of self-efficacy and assertiveness to willingness to engage in traditional/nontraditional career activities. *Psychology of Women Quarterly*, 12, 91–98.
- Norlander, T, A Erixon and T Archer (2000). Psychological androgyny and creativity: Dynamics of gender-role and personality trait. *Social Behavior and Personality*, 28(5), 423–436.
- Scherer, JL, JS Adams, SS Carley and FA Wiebe (1989). Role model performance effects on development of entrepreneurial career preference. *Entrepreneurship Theory & Practice*, 13(3), 53–71.
- Scherer, R, J Brodzinski and FA Wiebe (1990). Entrepreneurship career selection and gender: A Socialization approach. *Journal of Small Business Management*, 28(2), 37–44.
- Schumpeter, JA (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard Press.
- Sequeira, JM, JE McGee and SL Mueller (2005). An empirical study of the effect of network ties and self-efficacy on entrepreneurial intentions and nascent behavior. In *Proceedings of the Southern Management Association 2005 Meeting*. Charleston, South Carolina.
- Sexton, DL and N Bowman (1986). Validation of a personality index: Comparative psychological characteristics analysis of female entrepreneurs, managers, and entrepreneurship students and business students. In *Frontiers of Entrepreneurship Research*, R Ronstadt, J Hornaday, R Peterson and K Vesper (eds.). Wellesley, MA: Babson College.
- Sexton, DL 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.
- Shane, S, L Kolvereid and P Westhead (1991). An exploratory examination of the reasons leading to new firm formation across country and gender. *Journal of Business Venturing*, 6, 431–446.
- Sinar, EH (1975). Sexual stereotypes of occupations. *Journal of Vocational Behavior*, 7, 99–111.
- Small Business Administration, (2004). [www.sba.gov/financing/soecuak/women.html].
- Spence, JT and RL Heimreich (1978). *Masculinity and Femininity: Their Psychological Dimensions, Correlates and Antecedents*. Austin: University Press.
- Spence, JT and RL Helmreich (1980). Masculine instrumentality and feminine expressiveness: Their relationships with sex role attitudes and behaviors. *Psychology of Women Quarterly*, 5, 147–163.
- Valian, V (1998). *Why so slow? The Advancement of Women*. Cambridge, MA: MIT Press.
- Vonk, R and RD Ashmore (1993). The multifaceted self: Androgyny reassessed by open-ended self-descriptions. *Social Psychology Quarterly*, 56, 278–287.
- Williams, JE and DL Best (1982). *Measuring Sex Stereotypes*. Beverly Hills, CA: Sage Publications Inc.
- Williams, JE, RC Satterwhite and DL Best (1999). Pan-cultural gender stereotypes revisited: The five factor model. *Sex Roles*, 40(7/8), 513–525.
- Wood, R and A Bandura (1989). Social cognitive theory of organizational management. *Academy of Management Review*, 14, 361–381.
- Zhao, H, SE Seibert and GE Hills (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, 90(6), 1265–1272.

Copyright of Journal of Developmental Entrepreneurship is the property of World Scientific Publishing Company and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of Journal of Developmental Entrepreneurship is the property of World Scientific Publishing Company and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.