Volume 5 | Number 2 Article 1

2002

New England Journal of Entrepreneurship, Fall 2002

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From Eggs to the Stars: Jane Pollak

Bouncing Back: Allan F. Lichter

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COLLEGE OF BUSINESS, SACRED HEART UNIVERSITY

New England Journal of Entrepreneurship

New England Journal of Entrepreneurship is a semi-annual publication (Fall and Spring) ot the College ot Business, Sacred Heart University, 5151 Park Avenue, Fairfield, CT 06825-1000.

Annual subscription rate for two issues is $12.00 for individuals and $50.00 for institutions. Copies are mailed via second-class postage. For subscriptions or reprints of articles, call (203) 371-7854; or email: Blaus@sacredheart.edu.

Editorial Consultant: Miccinello Associates, Branford, CT.

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From the Editors

Laurence Weinstein, Shawn Blau, Christopher Sheehan, Joshua Shuart 3

Feature Interviews

From Eggs to the Stars: Jane Pollak 5

Bouncing Back: Allan F. Lichter 9

Refereed Articles

Entrepreneurial Women and Life Expectancy 13
by Jeannette Oppedisano and Sandra Lueder, Southern Connecticut State University

Something Old and Something New? The Effects of CEO Change on Corporate Entrepreneurship 21
by J. L. Morrow, Jr., Birmingham-Southern College

Ethnic Entrepreneurship: Do Values Matter? 35
by Michael Morris, Syracuse University; Minet Schindehutte and Jack Lesser, Miami University

Social Cognitive Career Theory and Self-Employment Goals 47
by Gerald Segal, Dan Borgia, and Jerry Schoenfeld, Florida Gulf Coast University

Encouraging Technology-Based Ventures: Entrepreneurship Education and Engineering Graduates 57
by Teresa V. Menzies, Brock University and Joseph C. Paradi, University of Toronto

New England Journal of Entrepreneurship

Call for Articles

New England Journal of Entrepreneurship (NEJE), published twice a year by Sacred Heart University's College of Business, is intended to be an invaluable forum for exchange of scholarly ideas, practices, and policies in the field of entrepreneurship and small business management.

The journal is currently seeking original contributions that have not been published or are under consideration elsewhere. The scope of the articles published in NEJE ranges from theoretical/conceptual to empirical research, with maximum relevance to practicing entrepreneurs. The journal tries to appeal to a broad range of audience, so articles submitted should be written in such a manner that those outside of academics would be able to comprehend and appreciate the content of the material.

Format

Please submit four typed copies of your article, on separate pages, include an abstract of the article (100 words maximum) and a biographical sketch of the author(s). A title page should precede the article and should list the name(s) of the author(s) as well as their full address (including phone and fax numbers and email address). Papers are to be double-spaced with one-inch margins. References should be included on separate pages at the end of the paper. Manuscripts should be no longer than 20 pages of text and 25 pages total, including abstract, text, tables or illustrations, notes and works cited. Please consult APA style guidelines for all formatting details.

Copyright

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Review Process

All articles will be double blind refereed. Authors will receive reviewers' comments and the editors' publishing decision in approximately 90 days of submission.

All prospective authors are required to include a $20 submission fee with each manuscript sent in for consideration, payable to "NEJE." The fee will be used to cover administrative costs and will also provide the author with a year's subscription to the Journal.

Submission

Authors are encouraged to submit articles for the Fall 2003 issue by March 15, 2003. Papers received after the due date will automatically be considered for future issues of the journal.

All submissions and correspondence should be addressed to:

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Sample Copies

Sample copies of the previous issues will be available from the Editor on a first-come, first-served basis.

New England Journal of Entrepreneurship

From the Editors

For those who have had the pleasure of serving as an editor of a referred journal, you know all too well the time and effort it takes to publish a quality piece time after time. Volunteers can be your lifelines. We are pleased to announce that we are adding two such "lifelines" to our staff: Christopher Sheehan, Sacred Heart University's writer and editor assigned to the President's Office, and Dr. Joshua Shuart, Assistant Professor of Management in our Sport Management Program. Thank you both!

In the Spring 2001 issue of *NEJE,* we interviewed Robert Seliger ("Out on a Limb—and Thriving"). Seliger had left the relatively secure confines of Hewlett-Packard to start his own firm, Sentillion, Inc., a company dedicated to developing the means of coordinating and integrating complex applications in the medical technology field.

We asked Rob how Sentillion had done since our interview. His response follows:

We had a terrific year last year but found the first half of this year to be challenging. Like many companies, we were impacted by the economy and world events. In response to this, we altered our strategy. We did the following:

1. *We adjusted our positioning so that our selling process would be less evangelical and more bottom-line oriented. This meant refactoring our existing products so that we could more easily enter sales situations by leading with products that solve problems that the customer already thinks they have, and then following with our products that solve problems that customers did not realize they have. In simple terms, we now lead with the security aspects of our technology as opposed to the integration aspects.*
2. *We added a services component to our business that allows us more flexibility in customizing our offering.*
3. *We have reduced our dependence on channel partners to sell for us. To this end, we expanded our existing direct sales team.*

It would appear that our strategy is paying off. We have regained traction with commercial hospitals, and we recently closed a huge contract with the Department of Veterans Affairs. Several of our products will be installed in all 163 VA hospitals. This deal is worth $10 million to us. (See our web site www.sentillion.com for the press release.)

If there is a message for your readers, it is to pay attention to early warning signs of market changes that could affect your business. If you are really tuned to your business, odds are you will pick up on these warning signs before they manifest in a serious manner. It is not unlike seeing the early signs of ill health in a loved one or close friend even before symptoms appear.

The next trick is to react briskly, but thoughtfully. In our case, we did not drop our business and go do something else, but rather studied the reasons why sales had become challenging for us and attacked those issues. This can mean changes that can be hard to swallow, but are necessary. Conversely, if one is blessed with a good team, as I am, then the changes come more easily. New assignments, reorganizations (but no downsizing), and a shift in priorities for some people have resulted in a the rapid mobilization of Sentillion in pursuit of our expanded strategy.

It is too early to tell yet just how well this will all pay off, as the fourth quarter is classically our biggest quarter. I can tell you that we are well on the path to two times revenue growth year-to-year. In contrast, we are only at 120 percent of sales year to year, with a great shot at ending at 150 percent and, with the push we have on, we might even achieve 200 percent. Stay tuned!

We hope you enjoy this issue of *NEJE*, and as always, we encourage your feedback and input.

Dr. Laurence Weinstein, Editor in Chief
Dr. Shawn Blau, Managing Editor
Christopher Sheehan, Associate Editor
Dr. Joshua Shuart, Associate Editor

From Eggs to the Stars

Jane Pollak
Artist

Jane Pollak is a Westport, Connecticut, artist who started her career as a high school art teacher. She has now branched out into public speaking, is the author of two books, and embraces the life of entrepreneur as a sole proprietor of her rapidly expanding business of decorating eggs. For Jane, her life path has been one of hope and unexpected personal and business achievements.

NEJE: Your background of artist, then entrepreneur, and now a sought-after public speaker and author sounds so varied. When did the spark of inspiration come?
Pollak: There wasn't a direct path, if that's what you're looking for. My mom did own her own business. She was a party planner and I helped her out when I could. Before that, my sister for a time ran her own business decorating matchboxes with felt for sale in the neighborhood. So I guess you could say I picked up some things from family.

NEJE: When did you realize you were a talented artist?
Pollak: The "talented" part came later, but as a child I was one of four siblings and we each seemed to pick up a label that we had to live up to. One sister was "the writer," another sister was the "pretty one," and my brother was "the funny one." I was "the artist."

NEJE: Did you also consider using your creative interests and being in business for yourself at a young age?
Pollak: No, not at all. I grew up in the 1950s and 60s when there were almost no women that I knew of who had their own businesses. In that culture, women were encouraged and expected to become either teachers or nurses. So it was with me as well.

I took some education classes at Mount Holyoke College and later graduated from Columbia University's Teachers College. However, the seed was planted very early on for my later career interests because I actually started my undergraduate degree at George Washington University. I took nine hours in drawing and really enjoyed the classes. While at Mount Holyoke, I pursued my creative interests by studying studio art and theatre as my major.

NEJE: So that helps explain your first job as an art teacher in a nearby high school.
Pollak: Yes it does. I enjoy being an artist and felt comfortable teaching the subject to young people. However, I was brand new to the field, there was no curriculum to follow, and I must say it was pretty tricky at first figuring out what to do to keep up the students' interest.

What happened that first year was absolutely serendipitous. Back when I was seven or eight years old, my dad brought home a Ukrainian egg from work. I greatly admired it, then forgot about that experience for the next twenty years. When one of my colleagues suggested that I have my class decorate Ukrainian eggs for Easter, I was hesitant and a bit concerned about using class time for what might be perceived as a quasi-religious purpose.

My colleague showed me how to use a Rapidograph-like, fine-point stylus to decorate the eggs and I caught on to the technique right away. It takes patience and a steady hand, but my students enjoyed the egg decorating and a one- or two-day project actually lasted six weeks. The students loved it and so did I!

NEJE: So your business got started?
Pollak: No, not right away. I did call the *New York Times* and they ended up printing a two-column article about the class in 1973. Their interest in the egg-decorating class project affirmed how I felt about the experience so it stuck with me. The actual business came later.

NEJE: How much later?
Pollak: I stayed with teaching for two years, from 1972 to 1974. After that I got pregnant with our first child and left the field. During that time I exhibited at my first craft shows. I devoted myself to raising our three children, but kept up my artwork on the side exhibiting in one or two craft shows a year—hardly a career. Someone must have noticed my work because I was invited by the White House to design Easter eggs for the annual White House Easter egg hunt in 1981. The invitation came from "out of the blue" and I was flattered to be considered worthy of that kind of attention.

I started decorating eggs on a fairly regular basis at that time and sold them for $8 apiece. Some artists use a canvas; I decided that eggs would be my mode of self-expression. It's very fine work. Each egg takes roughly two to three hours of intense concentration, and during the creative process I am completely "in the zone." I am literally unaware of time passing or what is happening around me. I feel completely alive and totally involved in what I am doing!

NEJE: Are we ready for the "ta da! A business is born"?
Pollak: Almost! During the 1980s, my work was still more a hobby than a business. In 1985, *Country Living* printed an article on quilt designs I was painting on the eggs and that seemed to generate more interest in what I was doing. In fact, I think I raised my prices after the article to $75 an egg! In 1987, our last child went off to kindergarten and I had more time to think about where I wanted to take my creative interests.

Although my business was growing steadily financially, I thought I wanted something with more status and a steady paycheck. I saw an advertisement for an arts administrator in New Haven. They were looking for someone with an academic background who had a teaching degree and experience in the art field.

The pay was $40,000 per year and that was an excellent salary back then. I hadn't updated my resume for a while, so I went to the alumnae office at Mount Holyoke and asked for assistance.

The woman assigned to help me asked what I was doing at the time. After I told her about my creative pursuits, she responded, "Why would you want to do anything else?" Her comment really surprised me. It made me take stock of my life and for the first time consider what being an entrepreneur would involve. By the way, I sent in my updated resume anyway for the arts administrator job but never did get called for an interview. That helped me make the decision to turn my egg decorating business into more of a full-time venture.

It was a true turning point in my life. I promised myself I would do the very best I could to succeed at it.

NEJE: Did you prepare a business plan?
Pollak: Not until 1989. I attended a full-year course offered by the American Women's Economic Development Corp. (AWED) in New York. The course was designed for women who were small business owners and we were each asked to generate our own business plan. I think I was the only one who actually took the time to do it, but it was a great experience and well worth the time and effort.

NEJE: What else did you learn from the course?
Pollak: The main thing I learned was the importance of developing my own brand identity. That involved things like creating a logo, a business card, my website, the right combinations of copy and visuals to use and so on. It wasn't easy. I went through several iterations and finally realized that spending money to hire a real pro for this type of marketing communication was very, very important.

I'm proud of what I've accomplished and I welcome your readers to see for themselves how my business has evolved. They can check out my website at www.janepollak.com.

NEJE: How did your business develop?
Pollak: I started entering my decorated eggs into juried craft shows and exhibited in about 10 such shows a year.

My big break came at a trade show where I wound up with $7,000 worth of orders for my eggshell jewelry! I was so excited. I called my duck egg source and told them I needed dozens and dozens of eggs. I use hen eggs for the decorated eggs and duck eggs for the jewelry pieces. They told me, "Duck eggs only start becoming available in the spring of each year. We don't have any to sell you." Did I ever learn about entrepreneurship then! I scrambled until I could get ahold of a new vendor. It was quite the scene.

NEJE: In your book,* Soul Proprietor, *you spend a considerable amount of time discussing how important it is to work on self-development. How come?
Pollak: Before there can be business development there has to be personal development. It's hard, but one has to learn that being rejected in a business environment is not the same as personal rejection. If orders stop coming in, for instance, I have to remind myself what's happening is *not* about me. It's about the normal business cycle or perhaps I'm not pursuing leads aggressively enough. I have to separate my personal feelings from what's occurring in the business.

NEJE: Rejection was hard for you?
Pollak: Isn't it for everyone? We all have to deal with rejection. I was working with an executive coach some years ago and I had recently been ignored by the American Egg Board to work for them on an ongoing basis. The coach told me they weren't rejecting me, Jane Pollak. They just didn't feel my talents fit into their plans at that moment in time.

Understanding that, *accepting that*, was a big step for me as an artist because we artists like to keep ourselves in the background. "Don't look at me, look at my work." Most artists would rather "hunker down" in their studios than face hearing negative things about their efforts or risk rejection. Our whole being in a way is held up for public scrutiny every time we show our work. We're awfully sensitive as a group. So I had to desensitize myself and understand how to separate my business self from my artist self.

I work pretty much alone. There are two high school art students who come in for about ten hours a week to help me out. Otherwise, it's just me and it can be very isolating. I listen to educational business and motivational tapes while I'm painting to keep my mind occupied and my focus where it should be. Wayne Dyer, Roger Dawson, and Brian Tracy are my personal favorites.

I also joined Toastmasters to become a better public speaker. This has given me enormous self-confidence. I write a vision statement at the end of every year and I keep it posted right next to my workbench. This motivates me to ask myself continually if I am doing everything I can to meet those goals. If I'm not meeting my goals, then I have to ask myself, "What *should* I be doing differently? I just can't sit here and hope things will turn out differently. I am in control of my destiny. Now what do I have to do to make it a reality?"

NEJE: How is business for you now?
Pollak: Well, I can tell you that it will cost you $300 an egg if you want to buy one today. Also, I'm paid thousands of dollars to share with audiences what I've learned. That's progress! Business ebbs and flows, but I am satisfied with my work and the visions I have changed into reality.

NEJE: Your earrings are stunning. Did you make them as well?
Pollak: Yes, I started producing a line of earrings several years ago. I make the earrings from eggshells that are filled with epoxy. They sell from $59 on up for a set. I decided to go into jewelry items because you can't stay in one place as an entrepreneur. You need to keep pursuing ideas to keep yourself fresh and interesting to your customers. If you have a new product idea to develop, keep showing up, and keep working on developing yourself. Eventually, that kind of persistence and hard work will pay off!

—S.B.
—L.W.

Bouncing Back

Allan F. Lichter
Millennium Graphics

As on previous occasions, the editors of the New England Journal of Entrepreneurship *have sought to interview local small businessowners as well as entrepreneurs who have national reputations. One such small business operator is Allan Lichter, coowner of Millennium Graphics in Bridgeport, Connecticut. Mr. Lichter's story is certainly unique to him and to his partner, but readers may resonate with portions of this story as to how challenging it can be to surmount the ups and downs of the business cycle.*

NEJE: How long have you and your partner owned Millennium Graphics?
Lichter: Twenty-two years. We started in 1980 by purchasing an existing printing business. The business had three employees and achieved only $150,000 in annual sales at its peak. By contrast, in our best year, 1997, the company grossed more than $6 million.

NEJE: Congratulations!
Lichter: Thanks. It's been a challenging experience for my partner and myself since we decided to leave our common employer, a large commercial printing operation in New Haven, Connecticut, to borrow money on our homes—it was a second mortgage for both of us—and to go off on our own.

NEJE: You seem to have prospered. Your operation now has more than 30 employees and everyone seems to be busy.
Lichter: For the moment, we are busy and we are thankful for that. However, our business is very sensitive to business cycles and we are worried about a possible "double-dip recession" in 2003. We simply have to continue to work hard everyday to maintain current business and develop new business.

NEJE: So it appears we need context for your remarks. Why such wary comments?
Lichter: Part of it is the economy. Our current customers are buying less and new clients are more difficult to acquire. Part of it is also due to customers leaving Connecticut for lower wage or lower tax states. And a piece of why we are in a challenging financial environment is due to a former company employee who embezzled hundreds of thousands of dollars from us.

NEJE: Whoa! You just said a mouthful. Let's start with the economy. Many economists have been saying the country is starting to climb out of a recession that has lasted longer than had been forecasted.
Lichter: That speaks only to the national economy, not what's happening locally. And locally, every one of our customers has cut back spending to the bone to stay profitable. One of the biggest areas in which they have cut expenses is consumer promotion. Not just local advertising, which admittedly has been especially hard hit, but sales promotion and collateral materials as well. That means us. Printers depend on that type of activity. Thank goodness for our specialty label business—it has offered Millennium Graphics a stable and fairly secure source of revenue. It's also a growing segment of the printing industry.

NEJE: When did you get into the label business?
Lichter: Actually, that was the first business we were in because we inherited it from the former owner. We have taken labels into new areas, but that was how we drew our first paychecks—from printing labels.

NEJE: How do you and your partner sort out who does what?
Lichter: My partner concentrates on production and finance. I focus on sales and marketing. We make a really good team. He has his area of expertise and I have mine. We get along well professionally because we don't get into each other's way and we don't second-guess each other. Actually, that's why I picked him as my business partner.

When I thought about going into my own business back in the late 1970s, I wanted someone who could supplement my skills, not duplicate them. What's the sense of having a partner who only knows what I already know well? Ours is a business that needs both an "inside" production person and an "outside" salesperson. So when I finally made the decision to become my own boss, I only considered partnering with someone who was strong in areas where I considered myself weak.

NEJE: Was it hard to convince your current partner to leave a safe job with secure income coming in every week?
Lichter: No, not at all. He was ready. I asked him if he wanted to work for someone else all his life or start making money for himself with a "sky's-the-limit" attitude. We were both ambitious and we were ready to make a commitment to working long hours.

NEJE: But from what you said a few moments ago, do you feel all the hard work has paid off for you and your partner?
Lichter: Absolutely! We've had an amazing run and it's been reflected in our lifestyles. It's been only the last four to five years that the business has become so uncertain in terms of long-range outcomes.

Consider this. Once we took over the business, we were able to double annual revenue virtually every year for five or six years running. We identified business areas that were growing rapidly within the Fairfield County, Connecticut, area and built our business plan to take advantage of their success. One example is the chemical industry. Our entrée was label printing which opened doors into commercial offset printing. Once that got going, we bought press after press to handle the volume.

At first, all we could afford were tired, secondhand presses. Then, as our business grew and we made terrific connections with local banks, we were able to borrow money against the business by opening up strong lines of credit, and purchase new, more efficient machinery.

By the mid- to late-1980s, we continued to grow the business substantially but the base was too large to double it every year so we had to be content with strong double-digit, not triple-digit, growth. That's still a tremendous achievement and we're proud of it. For some 17 years, we beat every previous year's sales.

NEJE: Then things started to get a little rocky.
Lichter: I guess our biggest mistake was becoming complacent and not seeing the storm clouds on the horizon. And then when it was raining on us, we continued to deny we had a problem. If we had reacted sooner, we might have avoided some of the serious problems that came "down the pike" later.

NEJE: We've discussed the slowing economy. You also mentioned losing business as companies pulled up stakes from Connecticut.
Lichter: Some of our biggest accounts left and that really hurt us. And the sad thing is, most times you don't see it coming and, for sure, there's nothing you can do about it. Our chemical customers left Fairfield County where we have our printing operation. A large shoe manufacturer, 9 West, moved to another state. We lost these accounts because purchasing managers want their printing suppliers to be close by. Waldenbooks also moved out of state and they were another big volume customer.

There's always a normal ebb and flow of businesses moving in and out of a geographic area, but there appear to be serious net losses for us here in southwestern Connecticut over the last few years. It may take some time for momentum to turn around in our favor.

We also made a mistake with the way we handled a local health care company.

NEJE: Is this another example of a company leaving the area?
Lichter: No, it's not, but it made things worse for us at a time when we were already hurting from losing business due to relocations. For several years, we developed a strong relationship with three contacts in this rapidly rising organization that handled most of the print outsourcing for the firm. Two younger associates, more or less their assistants, stayed in the background and we didn't take the time to nurture the same relationship with them. We were too busy catering to the managers, the "top dogs," so to speak.

Then, during our peak year of 1997, one of the managers said he expected to start taking over the New York City portion of their printing needs due to some internal reorganization. He strongly encouraged us to buy a new, very expensive press to handle the anticipated business. It sounded like the manager knew what he was talking about and we trusted him. Business was continuing to come in, so why would we question his loyalty or his judgment?

NEJE: And things didn't go as expected?
Lichter: No, for several reasons. We went ahead and bought the press. Fortunately, the manufacturer of the printing press was willing to sell it to us and take on the mortgage. We didn't have to borrow much against the business to purchase it. But when it was all set up and ready to go, the expected print order volume from New York never materialized. The press languished but we had to keep sending in loan payments on it every month. It was crazy.

Within a few months, all three managers who had been our "best buddies" either had retired or were transferred to other departments as the health care company met some strong competitive headwinds and went through a contraction period. Some contraction! We went from doing about $1.5 million in business down to just $300,000 within two years. It was devastating.

Once the original contacts were gone, their assistants took over and their indifferent attitude reflected what might have been hurt feelings. In hindsight, we made the assumption the assistants would follow along doing business with us just like their managers. But other printing companies were soliciting the business, making an impression on the assistants that they mattered. We, apparently, were too blind to see our mistake in taking them for granted.

NEJE: Why didn't you just apologize for the oversight and try to get the business back by giving the assistants the attention they deserved all along?
Lichter: Well, there's more to the story. We were stretched to the limit in terms of our operation. Every press was busy. We were running two shifts and contemplating adding a third. My partner and I were overwhelmed and so was the whole organization. Customer service started to suffer. Every one of our clients wanted their printed materials "yesterday." It was "Get it to me right away!" "Do mine first!" "I need it *now*!" The pace was frantic. Business was booming everywhere. It was the "go-go '90s." Everything was possible. Everything.

Then clients started to notice the service issues. At first, they didn't say anything because they needed the materials so badly. At a certain point, though, the clients couldn't ignore the poor service we were providing. It was a tough lesson for us to learn. We never should have let our reputation for only producing the highest quality printing and offering the best service slip like we did.

It was devastating. We had always cared so much about quality and customer service in the beginning, but then we changed our priorities. We had moved our focus to quantity and just getting jobs out because every client demanded immediate attention. We should have turned jobs away, I suppose, but who wants to do that? Lose business to a competitor? It just wasn't in our company culture. Certainly, as a salesperson, it wasn't part of my make-up. I've always been very competitive and so turning away business was inconceivable.

NEJE: We've heard about the recession, about companies moving away, and your mistake with the health care organization. However, something tells me the embezzlement piece of this story is going to be pretty important.
Lichter: True. (Pause)

NEJE: Can you share this with us?
Lichter: Yes, I can, but it's all so very painful. This is bringing up some awful memories for me. It was a financially trying experience that nearly forced us into bankruptcy. From the highs of 1997 to the depths by 1999. It's been some roller-coaster ride!

NEJE: What happened exactly?
Lichter: The events go back to 1996. Apparently our accounting clerk, who had been with us for five years, started to take accounts payable checks made out to other companies for supplies they shipped to us and began to deposit them in dummy accounts she had set up at her bank under a different name.

NEJE: How long did this go on?
Lichter: Roughly 18 months. You see, the employee was also in charge of accounts receivable as well as accounts payable, so she was able to juggle things around and make excuses to our suppliers and they went along with it. She would answer the phone and, we were told later, make things up like she had cancer or needed an operation of some type, or had to take time off for family problems, yadda, yadda, yadda. All this was kept hidden from us because she was so smooth.

When a supplier became threatening, she would pay part of the outstanding invoices with money orders and cool off the caller for a while. She had a knack for spreading around the money while siphoning off many thousands for her.

NEJE: And you and your partner missed it.
Lichter: Yes. Remember, I had my focus on sales and marketing, and my partner kept his attention on production and, supposedly, finance. But we were so busy and things were so out of control. He was spending long hours concentrating on getting work out and had no time left for the more mundane tasks of checking up on receivables and payables. We both trusted this employee to handle the bookkeeping. It seemed to us that everything was going along just fine.

NEJE: Was your accountant suspicious?
Lichter: We have a terrific outside accountant and he felt absolutely awful when we discovered the embezzlement, but it wasn't his job to deposit the money coming in or paying the bills. Our accounting clerk would make up the daily balances and give him the information to prepare our monthly statements and she was able to fool all of us, including our CPA.

NEJE: How did you finally catch on?
Lichter: One day my partner just happened to pick up the phone first and a supplier who had been promised payment was on the line. He was livid about being "lied to." My partner remembered he had signed the check to cover the outstanding balance to this company only a few weeks ago and he became suspicious.

He asked the accounting clerk to go to the check archives to see if the cancelled check had come back from the bank. When he left to go back to the production department, the clerk cleared out her desk quickly and left the building in a huff, according to other office workers who saw this whole thing unfold.

When we realized she had left work without explanation, then found the cancelled check with a strange endorsement, we knew we had a very serious problem on our hands.

NEJE: How did your bank respond? Did they suspect some of their employees might have been involved in this scheme?
Lichter: Our accounting clerk apparently had built up a relationship with the local bank cashiers over a period of years. They knew her. They knew us. They should have been suspicious, I guess, but when they didn't hear about her accounts being a problem, they must have figured we somehow implicitly knew about and approved what she was doing.

However, bottom line is we went to the bank, explained what had happened, and one of their regional vice presidents got involved in a hurry. He told us how sorry he was about the whole incident and promised the bank would stand by us. They would make sure we would be able to continue in business and pay off all our creditors.

NEJE: And did they?
Lichter: No, the bank's management stalled and finally balked at repaying us for any of the funds taken out of our business. They backed down from their promises and we actually had to sue them to get some compensation for our

losses. What put salt in the wounds for us was the $90,000 we had to spend on lawyers just to get the bank to sit down with us and admit some culpability.

NEJE: Were you made whole?
Lichter: I cannot divulge the settlement, but my partner and I were not satisfied with the outcome.

NEJE: How long did you struggle financially?
Lichter: Actually, less than two years. It's been a personal triumph for us. We had had stellar credit with all our creditors for nearly 20 years and you can't put a price on that. So after this whole thing blew up, we sent letters to all of our suppliers. Some were understanding and said they would back us. Others were not so kind. However, we carefully managed each account and we're now back on track.

We have downsized our office space, sent the large press which wasn't used to capacity back to the manufacturer and they were willing to work with us. We're down to one shift again and watching quality and customer service like hawks.

NEJE: Do you expect Millennium Graphics to be in business five years from now?
Lichter: I don't like to forecast so far into the future, but, yes, I believe we will be in business and I'd like to think we will be thriving once again. We've been through so much and my partner and I still feel we're vulnerable to outside forces over which we have no control. That's scary in some ways, but it's no different for any other small business operation.

NEJE: How do you keep up your morale? How do you come to work each day with the energy and focus to make it all work?
Lichter: What choice do I have? I'm not just going to walk away after devoting 22 years of my life to building this company. We have a business, a responsibility to our employees, our clients, our suppliers, and to our families. You don't simply walk away from a business that once stood so tall and say, "Aw shucks." We're here for today and I expect for many days to come. We've learned a lot, bounced back, and perhaps some day we'll be stronger and even more profitable than ever before. You've got to believe in things like that or why would anyone work so hard and take the risk of going into business for themselves?

—L.W.

Entrepreneurial Women and Life Expectancy

Jeannette Oppedisano
Sandra Lueder

This article explores whether the longevity phenomenon experienced by entrepreneurial women born between 1720 and 1940 can be explained by the life circumstances of these women or whether other research may provide better insights into their remarkable tenacity. The characteristics of hardiness, resiliency, and self-efficacy should be examined as well as the newly developing research theories of perseverance in the face of adversity to determine which are most appropriate in explaining what is clearly female entrepreneurial endurance.

Recent historical research into the lives of entrepreneurial women (Oppedisano 2000) unveiled a dramatic fact: 97 percent of the profiled women born between 1720 and 1940 surpassed the life expectancy of their generation—and, for the most part, by large margins. This article delves into whether the longevity phenomenon is easily explained by the life circumstances of these women (e.g., being born into affluence, living in a physically safe time/environment, choosing low-stress career paths, not getting pregnant). It also explores whether the research on hardiness, resiliency, self-efficacy, and perseverance in the face of adversity provides insights into possible alternative explanations for the long lives of these women.

Introduction and Background

Commonly identified factors that contribute to life expectancy are heredity, lifestyle, health and health care opportunities, affluence, marriage, stress management, and personality. According to gerontologist Kevan Namazi, 20 to 30 percent of the success of living a long life is based on heredity, 50 percent on lifestyle, with the balance influenced by factors such as socioeconomic status and strong social ties (Schneider 2002). "All along the social class gradient, at each of its levels, richer and more socially prominent people live longer than poorer and less advantaged people…even in the advantaged group, those higher up in the hierarchy are healthier than those lower down," reports Shelley Taylor, professor of psychology (Taylor 2002, 163).

Additionally, starting an entrepreneurial venture has substantial negative impact on not only the entrepreneur, but on the spouse and family because of conflicting needs/demands of business interests and family commitments (Kuratko and Hodgetts 1995; Liang and Dunn 2002). This family pressure is supported in research conducted by Liang and Dunn (2002). When they posed the question to entrepreneurs of whether they would start a business again, of those who responded affirmatively, more than 50 percent cited not enough time for spouse and children as a problem. Of those who would not start such a venture again, the numbers climbed to 61 percent and 72 percent, respectively. Taylor's research on health and stress highlights the importance of social ties for women. She points out that women and men respond differently to stress. Instead of a "flight or fight response" typified by men, women respond in a nurturing manner referred to as the "tending instinct" (Taylor 2002).

Ecological Approach to Assessing Longevity Factors

Dr. Robert Butler, president and CEO of the International Longevity Center, brought together a group of researchers and experts in medicine and public health to explore the factors that contribute to a healthy life. Among their suggestions was that an expanded, ecological approach be used to effectively assess the dynamics involved. (See Figure 1.) They noted that it was a necessity to identify "…behavioral determinants including psychological factors…interpersonal processes, primary social groups…institutional factors…community factors, public policies, and physical environmental factors (Butler 2000, 13).

Ecological Approach Applied to Profiled Female Entrepreneurs

This section explores physical environmental factors, the historical context, social factors, and capacity of individual and resources that influenced the longevity of entrepreneurial women.

Physical Environmental Factors

Women born in the 1700s to the 1800s were primarily "frontier" immigrant women living through all of the dangers such a label implies. Women like Ann Lee, Mary Donoho, Abigail Dunaway, and Freda Ehmann crossed oceans, continents, mountains, and rivers by boat, wagon train, horseback, or early railcars often in the face of possible attack by robbers, Indians, or persons of malicious intent. Others were born into or were children of slavery; for example, Madame C. J. Walker, Lucy Laney, Clara Brown, Elizabeth Keckley, and Mary Ellen Pleasant.

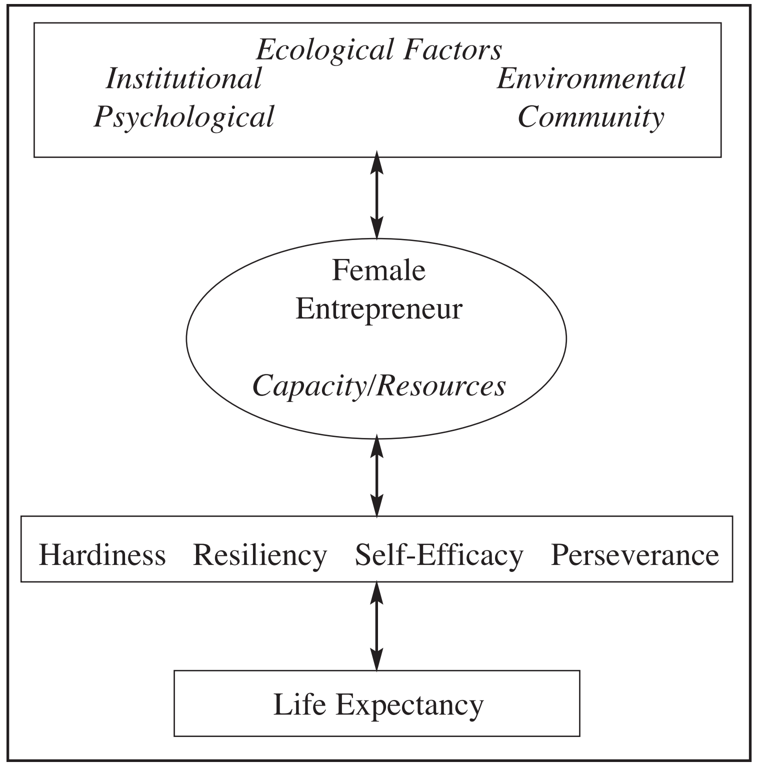

Figure 1. A Conceptual Model of Female Entrepreneurs and Life Expectancy

Additionally, even women born into privilege, such as Henriette Delille, Juliette Low, Jane Addams, Lucy Scribner, and Katherine Drexel, gave their money away and, in the cases of Delille, Addams, and Drexel, chose to live in poverty to support their "missions." Their goals might seem exaggerated if we could not place them in the historical framework in which these women found themselves.

Historical Context

For the first two centuries covered in this data, many women died because of the medical care of the times; for example, dying in childbirth, being medically diagnosed incorrectly because of the "dictates of Victorian prudishness" (Stage 1979, 78), or succumbing to infectious diseases in these preantibiotic days. Thus, when we review the life circumstances of the profiled women, we might wonder why they did not die young because so much was going against them in terms of health care. Juxtapose this with the following facts about some of these women.

Childbirth. Giving birth was a dangerous, life-threatening experience for women in the 18th and 19th centuries. However, Ann Lee (1736–1784), founder of the Shaker movement, gave birth to four children; Lydia Pinkham (1819–1873), founder of the Lydia Pinkham Medicine Company, had four; Clara Brown (1803–1885), a former slave who became the owner of a number of laundry businesses and mining companies, had four; Rebecca Lukens (1794–1854), champion of the Lukens Steel company, had five; Mary Donoho (1807–1880), proprietress of the Donoho Hotel, had six; Abigail Duniway (1834–1915), founder/publisher of the *New Northwest* newspaper, had six; and Ninnie Baird (1869–1961) initiator of Mrs. Baird's Bakeries, had eight.

Early Medical Practices. Medical practices during the early period of the United States were in the beginning development stages of this scientific endeavor; surgical instruments were not sterilized, bloodletting was practiced, and the doctors (almost entirely men) were not supposed to look at the naked body of a female. Juliette Low (1860–1927) had an ear infection that led to deafness, yet she founded the Girl Scouts of America. Julia Morgan (1872–1957), who led her own architectural firm for more than 46 years, had an "altered" line to her face because of a bone infection behind the ear. Susan La Flesche Picotte (1865–1915), the first female Native American medical doctor, became deaf and eventually died following a long struggle with cancer. The Walthill hospital she initiated in Nebraska was renamed the Dr. Susan Picotte Memorial Hospital in her honor.

Infections. Infections developed and spread quickly because those living in the 17th, 18th, and early 19th centuries did not have antibiotics or even widely practiced sanitation methods. Henriette Delille (1813–1862), founder of the Order of the Sisters of the Holy Family—a religious community for women of color as well as a school, hospital, and home for the sick, aged, and poor—suffered from pleurisy throughout her life. Susan Anderson, M.D. (1860–1960), went to Colorado because she was suffering from tuberculosis. Here she set up a frontier medical practice and survived calamities such as a diphtheria epidemic, an avalanche, blizzards, and mountain lions as she served her patients throughout this nascent state until she was 48 years old. Dr. Elizabeth Blackwell (1821–1912) was the first female medical doctor in the United States and the cofounder of the New York Infirmary for Women and Children. She had wanted to be a surgeon, but an eye disease she caught from a patient during her residency in France led to blindness in one eye.

Even though some people would be overwhelmed with such hurdles, none of these life experience factors limited what these women went on to accomplish. In fact, some of these negative dynamics could be viewed as "triggering events"—catalysts toward the ultimate entrepreneurial ventures of these women.

Social Factors

In addition to the physical and medical constraints noted above, a number of the women in this database suffered discrimination through racism, legal limitations, and gender-role expectations.

Racism. Henriette Delille (1813–1862) was a quadroon; that is, she was a woman of mixed blood who "passed" for white. She had access to money, education, etc. However, because she wanted to educate "Negroes," she risked not only her own possible imprisonment but disgrace for her prominent family because of the laws forbidding education of those in bondage. And, in fact, her family disowned her because of her chosen mission. Clara Brown, was a slave until her owners freed her at the age of 57. Well aware that her newly acquired status was tenuous because of "nigger traders"—people who would steal former slaves' legal documents and resell them as runaways—Brown went west to Colorado. Once she earned enough money through her many and varied businesses to go back to Kentucky, Brown risked her life on many occasions to bring other freed blacks out west and help them get established with jobs and homes. Mary McLeod Bethune (1875–1955) was the 15th of 17 children born to her parents and the first to be born free. She went on to initiate the Daytona Literary and Industrial Training School for Negro Girls, Bethune–Cookman College, and McLeod Hospital and Training School for Nurses. Yet, racism was ever present in her life. As a young girl, she had been taunted and assaulted. As a young woman, she was denied her dream of becoming a missionary in Africa because the Presbyterian Church "had no openings for black missionaries" on that continent. As an established educator, she and her students were threatened by the Ku Klux Klan.

Illegal Actions. Illegal actions and legal constraints also were perpetrated on some of the entrepreneurial women. In assessing these experiences, we must remember that these women lived in times when females were considered a property of their fathers or husbands and did not yet have the right to vote. Harriet Hubbard Ayer (1849–1903), initiator of her own international cosmetics firm, was illegally declared mentally unfit and institutionalized. She went on to become a vocal advocate for the mentally ill. At the age of 21, Martha Coston's (1826–1902) husband died, leaving her with three small boys to raise. She soon discovered she was penniless because her husband's partners had swindled her of his assets. She went on to invent the Coston maritime signals and founded the Coston Supply Company. While still a teenager, Eliza Pinckney (1722–1793) was left in charge of her father's plantation as well as the care of her mother and sibling. Since she had always been fascinated with botany, Eliza experimented with plants and eventually discovered how to successfully farm indigo in South Carolina, which then became a "cash crop" for that state. However, her overseer went to great lengths to sabotage her early efforts because of his loyalty to his native country, the island of Montserrat—the original source of the indigo harvest.

Gender-Role Expectations. In addition to the gender constraints noted above, female children had extremely limited access to education if they had any access at all. Emma Willard (1787–1870) was one of the first to change this. Although she had actually begun to teach at the age of 16, Willard started her first school, Middlebury Female Seminary, when she was 27. She advocated that girls be taught such "nontraditional" subjects as science, mathematics, and social studies. Religion was another arena where females had limited opportunities until women like Ann Lee (1736–1784), the Shaker religion founder, and Aimee Semple McPherson (1890–1944), architect of the International Church of the Foursquare Gospel, chose this line of work. According to Oppedisano, Lee's American persecutors had great difficulty accepting that a woman would choose to take this path. To "test their theory that she *had* to be a man in disguise, they tore her clothes and beat her across the chest—once in front of a judge in a court of law, and he didn't object" (2000, 159). Even centuries later, Molly Haley (1942) was still feeling the constraints of being born female. In 1967 she was married and a schoolteacher, but had to leave her job when she became pregnant because women were not allowed to teach in this "condition." She went on to establish Marblehead Handprints with her friend, Kathy Walters, a business that they shared for almost 25 years.

Capacity of Individual and Resources

In analyzing the life factors of these women, we must also consider the dynamics of an entrepreneurial venture itself. From the earliest definition of entrepreneurship to those frequently utilized now, such ventures incorporate starting an entity, taking risk (human, physical, and financial), and having an economic impact (Cantillon, in Brewer 1992). Certainly such an undertaking produces significant stress that puts strain on the entrepreneur's body, mind, and spirit. For those willing to take on such responsibility, this choice could have a negative impact on overall life expectancy.

Once again, however, the women entrepreneurs seem to contradict such assumptions. In fact, some of these women did not even start their ventures until they were "past their prime"—that is, in their late 50s and beyond. Clara Brown was a slave until she was almost 60, yet she went on to become a noted miner, philanthropist, and elected member of the Colorado Pioneer Association. At 58, Freda Ehmann (1839–1932) was widowed and deeply in debt from investing in her son's agricultural dream. Yet, with no relevant educational background, she went on to invent the process for preserving olives, initiated the Ehmann Olive Company, and was later acknowledged as the "mother" of the California ripe olive industry. Mary Baker Eddy founded the Church of Christ Scientist in 1879 when she was 58, and left an estate of $2.5 million when she died at the age of 89. Her international church and its related enterprises are still thriving. In 1890, Amanda Theodisia Jones (1835–1914), age 55 and the holder of over six patents, started the United States Women's Pure Food Vacuum Preserving Company. Clara Hale (1905–1992) began Hale House, a residential treatment center for drug-addicted babies, when she was 65 years

Table 1

Life Expectancy v. Actual Life Span for Women Entrepreneurs

Life Expectancy at Birth	*Age at Death*	*Race/Ethnicity*[1]	*Entrepreneur*[1]	*Life Span*[1]
1700-1799 25-35[2]	48	Caucasian	Lee, Ann	1736-1784
	60	Caucasian	Lukens,Rebecca	1794-1854
	71	Caucasian	Pinckney, Eliza	1722-1793
	83	Caucasian	Willard, Emma	1787-1870
1800-1899 35-45[3]	35	Caucasian	Smith, Elizabeth Drexel	1855-1890
	47	Caucasian	Seymour, Mary	1846-1893
	49	African American	Delille, Henrieffe	1813-1862
	50	Native American	Picotte, Susan La Flesche	1865-1915
	52	African American	Walker, Madame C./Breedlove	1867-1919
	54	Caucasian	Pinkham, Lydia	1819-1873
	54	Caucasian	Ayer, Harriet Hubbard	1849-1903
	54	Caucasian	McPherson, Aimee Semple	1890-1944
	67	African American	Walker, Maggie Lena	1867-1934
	67	Caucasian	Low, Juliette	1860-1927
	70	Caucasian	O'Neill, Rose	1874-1944
	70	Caucasian	Rudkin,Margaret	1897-1967
	72	Caucasian	Stinson, Emma	1868-1940
	73	Caucasian	Donoho, Mary	1807-1880
	75	Caucasian	Addams, Jane	1860-1935
	76	Caucasian	Coston, Martha	1826-1902
	78	Caucasian	Scribner, Lucy Skidmore	1853-1931
	79	Caucasian	Jones,Amanda	1835-1914
	79	African American	Laney, Lucy	1854-1933
	79	Caucasian	Stinson, Marjorie	1896-1975
	80	Caucasian	Morrell, Louise Drexel	1863-1943
	80	African American	Bethune, Mary McLeod	1875-1955
	81	Caucasian	Duniway, Abigail	1834-1915
	82	African American	Brown, Clara	1803-1885
	82	Caucasian	Strong, Harriet	1844-1926
	82	Caucasian	Emery, Mary	1845-1927
	83	Caucasian	Day, Dorothy	1897-1980
	85	Caucasian	deWolfe, Elsie	1865-1950
	85	Caucasian	Morgan, Julia	
1872-1957	85	Caucasian	Everleigh, Ada	1875-1960
	85	Caucasian	Stinson, Katherine	1891-1977
	89	African American	Keckley, Elizabeth	1818-1907
	89	Caucasian	Blackwell, Elizabeth	1821-1912
	89	Caucasian	Eddy, MaryBaker	1821-1910
	90	African American	Pleasant, Mary Ellen	1814-1904
	92	Caucasian	Baird, Ninnie	1869-1961
	93	Caucasian	Ehmann, Freda	1839-1932
	95	Caucasian	Behrman, Beatrice	1895-1990
	97	Caucasian	Bulliff, Dorothy Stinson	1892-1989

Table 1 (con't.)

Life Expectancy at Birth	*Age at Death*	*Race/Ethnicity*[1]	*Entrepreneur*[1]	*Life Span*[1]
	97	Caucasian	Graham,Martha	1894-1991
	99	Native American	Martinez, Maria	1881-1980
	100	Caucasian	Anderson, Susan	1860-1960
1900-1940 49-67[4]	56	Caucasian	Graham, Bette Nesmeth	1924-1980
	85	Caucasian	Ash, MaryKay	1916-2001
	87	Caucasian	Hale, Clara	1905-1992
	98	African American	Austin, Hattie Moseley	1900-1998
Still Living…	63	Asian	An, Helene	1938
	67	Caucasian	Hinds, Catherine	1934
	67	Caucasian	Steinem, Gloria	1934
	71	Caucasian	Siebert, Muriel	1930
	71	Caucasian	Treganowan, Lucille	1930
	74	Caucasian	Vernon, Lillian	1927
	75	Caucasian	Billings, Patricia	1926
	78	Caucasian	Caplan, Frieda	1923
	81	African American	Stewart, Ellen	1920
	91	Caucasian	Duss, Vera	1910

1. Oppedisano, J. 2000. *Historical encyclopedia ofAmerican women entrepreneurs 1776 to the present*. Westport, CT: Greenwood Press.
2.Adapted from the U.S. Census Bureau. 1995. *Sixty-five plus in the United States, http://www. census. gov. socdemo/www/age-brieflhtml* (accessed July 11, 2001).
3. Adapted from the U.S. Census Bureau. 1975. *Historical statistics of the United States: Part I*; Vinovskis, M., ed. 1979. *Studies in American historical demography*. New York, NY: Academic Press.
4. Adapted from the Berkeley Mortality Database. 1998, http://www.demog.berkeley.edu/wilmoth/mortality/overview.html (accessed July 11, 2001); U.S. Government, National Vital Statistics Report. 1999. *Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900-28, and United States, 1929-97*: 32-33.

old. And Patricia Billings (1926) initiated the Geobond Company, a chemical research facility, as she was turning 70.

Although primarily only one example of life circumstances is presented in the text for each of these women, most of them experienced multiples of these factors such as death of or divorce from a spouse, racism and sexism, poverty, danger, poor health as well as shouldering responsibility for parents, children, and community. Thus, their life expectancy should be shorter than what was projected for their contemporaries, not longer. (See Table 1 for a listing of these women, their life expectancy at birth, and their age at death.)

Toward a Better Understanding of Life Expectancy and Women Entrepreneurs

The women entrepreneurs born between 1720 and 1940 who were profiled by Oppedisano (2000) lived much longer lives than their generational counterparts (see Table 2). Their significant successes in the face of great adversity may be due to their innate personalities. It certainly appears that, rather than being overcome or defeated by adversity, these women turned stressful events into life-changing possibilities and opportunities for their personal and professional development and that of others around them.

Some might argue that longevity of entrepreneurs cannot be compared directly with the general population life expectancy at birth because the former suffers from a form of survivor bias. However, the differences in Table 2 are so great that further research is warranted to understand their causes.

Research on hardiness, resiliency, self-efficacy, and perseverance in the face of adversity holds much promise in understanding the factors that contributed to the long lives of the profiled women entrepreneurs. Four major research constructs emerge about which greater understanding is needed for the relevant contribution to life expectancy for female entrepreneurship.

Hardiness

Research was initiated on the hardiness concept in the mid-1970s by Salvatore Maddi at the Illinois Bell

Telephone Company. Psychologist Suzanne Kobasa expanded this work, identifying psychological hardiness as a critical factor in an individual's well-being. Indeed, the "hardy personality" has been conceptualized as a source of resistance to the negative effects on health of stressful life events (Kobasa and Puccetti 1983) which enables individuals not only to cope but to thrive during the stress of adverse life events. These "hardy" personalities are able to turn life-changing situations into positive, transformational experiences.

Kobasa (1979) proposed that hardiness is a constellation of personality characteristics that function as a resistance source in the encounter with stressful life events. Three personality dispositions characterize hardiness: commitment, control, and challenge.

Commitment. Commitment is the tendency of individuals to involve themselves in, rather than experience alienation from, whatever they do or encounter. Perhaps the most important result of this deep involvement in their life activities is their refusal to give up easily when under pressure.

Control. This attribute is expressed as the tendency of individuals to feel and act as if they are influential, rather than helpless, in the face of the varied situations and adversities of life (Kobasa, Maddi, and Kahn 1982). They evaluate a particular event in the context of an overall life plan, thus lessening the potential disruptiveness of any single occurrence.

Challenge. Challenge manifests itself in the belief that change is a normal occurrence that offers interesting incentives to growth and transformation of the self rather than threats to security (Kobasa 1979; Kobasa, Maddi, and Kahn 1982; Kobasa and Puccetti 1983.) Therefore, "hardy" people are enabled by their perceptions to evaluate and cope in a manner that leads to successful resolution of the situation created by stressful events (Kobasa and Puccetti 1983).

Hypothesis 1: Hardiness is positively related to longevity of female entrepreneurs.

Resiliency

Resiliency is the ability of individuals to survive and thrive despite exposure to negative circumstances (Garmezy, Masten, and Tellegen 1984; Hollister-Wagner, Foshee, and Jackson 2001). Because resiliency is characterized by good outcomes in spite of serious threats to adaptation or development, resiliency research tries to understand the processes that account for these good outcomes (Masten 2001).

To be considered resilient, an individual must have experienced current or past hazards (e.g., maltreatment or violence) judged to have the potential to derail normative development (i.e., there must be demonstrable risk; Masten 2001). Additionally, there are different ways in which the relationship between risk and protective factors (e.g., importance of religion, self-esteem) might predict behavior.

Interestingly, it has already been observed that there may be gender differences in the resiliency process. For example, Masten et al. (1988) found that females were exposed to more negative life events than males before they experienced negative effects on their behavior. Others have found that females may be more resistant than males to the negative impact of risk (Masten 2001). This finding is particularly intriguing when trying to understand why women entrepreneurs beat the life expectancy odds by such great margins.

Hypothesis 2: Resiliency is greater among female entrepreneurs than among other females, male entrepreneurs, and other males.

Self-Efficacy

An individual's belief in her or his capability to perform a specific task is referred to as *self-efficacy* (Bandura 1977; Holmes and Masuda 1974). Research on self-efficacy suggests that this characteristic has important implications for work motivation. Because feelings of self-efficacy necessarily have an impact on the difficulty of goals selected by individuals, the more difficult and challenging goals tend to be chosen by those with higher self-efficacy. Similarly, individuals who have high self-efficacy tend to respond to negative feedback with increased effort and motivation. Thus, persons with greater self-efficacy are likely to work harder to overcome diseases and other threats to their lives, are more likely to choose riskier opportunities, and are more likely to stay at a task until completed successfully.

Hypothesis 3: Self-efficacy is positively related to longevity of female entrepreneurs.

Perseverance

Recently, Markham, Baron, and Balkin (2001) linked the concept of self-belief with determination and posited a new measurement tool for studying entrepreneurs—an adversity quotient. They suggest that the ability of the entrepreneur to persevere in the face of adversity is a determinant in her or his success in this type of endeavor and that this can be assessed. The physical/environmental, historical context, and social factors identified in this article coupled with the examples of entrepreneurial women who succeeded in spite of multiple adverse circumstances demonstrate this concept. This emerging body of research is promising for the question being pursued: What factors contribute to the longevity of women entrepreneurs in spite of what would appear to most people to be insurmountable obstacles?

Table 2
Comparison of Life Expectancy of General Female Population to Studied Female Entrepreneurs

Time Period	General Population Average Life Expectancy at Birth (years)	Studied Entrepreneurs Average Life Years at Death
1700-1799	30	65.5
1800-1899	40	76.7
1900-1940	58	81.5

Hypothesis 4: Perseverance is positively related to longevity of female entrepreneurs.

Summary and Conclusions

Since this article provides a limited analysis of those entrepreneurial women born between 1720 and 1940 contained in Oppedisano's (2000) research, further study should be directed toward providing greater insights into the longevity factors brought to light here. If, as Oppedisano (2000) and Masten (2001) suggest, entrepreneurial women/resilient women might possess characteristics unique to their gender, then what are they, and can they be learned? This would necessitate a comparable historical review of male entrepreneurs for comparative analysis. Based on the data in Table 2, demographers should analyze characteristics of the population from an innovative, entrepreneurial perspective. Longitudinal research on both female and male entrepreneurs born between 1940 to 1980 should also be analyzed for hardiness, resiliency, self-efficacy, and perseverance. This article has presented several hypotheses from which researchers could build an empirical research stream to further understanding of the relationship of gender-based factors and entrepreneurial life expectancy.

As the researchers reviewed the lives of the selected entrepreneurial women, they could not help but be impressed by the women's remarkable tenacity in the face of great adversity. Their lives are testament to the power of the human spirit—a power that, perhaps, can be explained, if only in part, by exploring the applicability of hardiness, resiliency, self-efficacy, and perseverance in the face of adversity. It is their hope that this research challenge will be undertaken so that further understanding of the uniqueness of the female entrepreneur will be attained.

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Someone Old or Someone New? The Effects of CEO Change on Corporate Entrepreneurship

J. L. Morrow, Jr.

Boards of directors often attempt to foster corporate entrepreneurship by replacing a firm's chief executive officer (CEO). Compelling theoretical arguments and anecdotal evidence suggest that when firm performance has suffered, a new CEO is best suited to lead the firm's creative endeavors. On the other hand, among firms that retain their existing CEO after a decline in performance, manipulating the CEO's compensation package is a common governance practice used by boards to encourage innovation. In these cases, some have argued that increasing the CEO's pay will encourage corporate entrepreneurship, because the CEO has been compensated for assuming additional risk. Counter to these propositions, this study develops theoretical arguments that a firm's existing *CEO is better equipped to foster corporate entrepreneurship and that this probability* increases *when the CEO's cash compensation is* decreased. *Results from a sample of 100 single-product manufacturing firms suggest firms that retain their current CEO and* decrease *the CEO's cash compensation are most likely to engage in corporate entrepreneurship. Implications that this research has for corporate entrepreneurship, corporate governance, and firm performance are discussed.*

The CEOs of profit-seeking organizations are charged with organizing the firm's resources to create value. This has prompted some researchers to theorize about the CEO's role in corporate entrepreneurship (Brazeal and Herbert 1999; Floyd and Wooldridge 1999; Greene, Brush, and Hart 1999; Stopford and Baden-Fuller 1994). While no published research has considered the impact of CEO succession on the process of corporate entrepreneurship, a large body of research has explored the relationship between CEO change and subsequent organizational change (Miller 1993; Tushman and Romanelli 1985; Virany, Tushman, and Romanelli 1992). Some of this research has focused on executive succession following a decline in firm performance (Barker and Duhaime 1997; Goodstein and Boeker 1991). The prevailing wisdom seems to be that when firms experience a period of declining performance, they should change their CEOs as a first step in bringing about strategic organizational change. In support of this argument, an abundance of literature suggests new CEOs are more likely to undertake new strategic initiatives than old CEOs (Ford and Baucus 1987; Starbuck, Greve, and Hedberg 1978; Tushman and Romanelli 1985). Many examples also exist in the popular press of new CEOs who have successfully brought about strategic organizational change (Iacocca 1984; Sager 1994). However, some research suggests that *existing* CEOs may be best suited to lead the organization's creative endeavors (Amburgey, Kelly, and Barnett 1993; Sutton, Eisenhardt, and Jucker 1986; Virany et al. 1992).

Consistent with research in organizational creativity (Woodman, Sawyer, and Griffin 1993), corporate entrepreneurship is the outcome of a complex interaction among individuals, groups, and the organization; and it seems clear that corporate entrepreneurship is affected by a large number of variables. However, it seems equally clear that the knowledge base and level of expertise possessed by individuals within the organization should also be a critical component necessary for corporate entrepreneurship. (Amabile 1979; Castanias and Helfat 1991; Greene et al. 1999; Penrose 1959). Indeed, Nonaka (1994: 21) argued that the individual is the "prime mover in the process of organizational knowledge creation" and that the quality of tacit knowledge possessed by individuals is critical to the creation of new strategies. Thus, firm-specific tacit knowledge may be used to formulate valuable organizational strategies, but such knowledge can only be developed by repeated experiences with an organization's routines (Nelson and Winter 1982).

The following quotation, attributed to Sir Joshua Reynolds (1732–1792), illustrates the important role that individuals play in the creation of value: "Invention is little more than a new combination of those images which have been previously gathered and deposited in the memory. Nothing can be made of nothing. He who has laid up no material can produce no combination" (quoted in Offner 1990). Reynolds was suggesting that the knowledge and information possessed by individuals, which may be viewed as the sum of one's life experiences, is a crucial element in creative behavior. However, the question addressed in this study is whether individuals who currently lead an organization, or individuals newly appointed to lead an organization, are most likely to have the greatest relevant stocks of knowledge and information that are useful for corporate entrepreneurship. Also examined is the question of what type of governance mechanism is most likely to provide the CEO with the proper incentive to lead and foster corporate entrepreneurship within the organization. In other words, it is not sufficient that new CEOs just bring about changes in the organization, but most importantly, these changes should create value that has the potential to be a source of sustained competitive advantage.

Firm Resources and Entrepreneurship

Schumpeter (1942) viewed *entrepreneurship* as the process of carrying out new combinations (e.g., new products, product markets, processes, technologies) by relying on the firm's existing stock of resources. He also suggested that the purpose of the firm is to seize competitive opportunities by creating or adopting innovations that make competitors' positions obsolete. Similarly, Penrose (1959) argued that the growth of the firm is limited not by the marketplace but instead by the creative capabilities of the firm's managers as they seek to take advantage of the firm's opportunities. Rumelt (1984) echoed the arguments made by Schumpeter and Penrose by suggesting that strategy should be viewed as entrepreneurship. If managers can create certain processes that are ambiguous, these processes have uncertain imitability and any benefits that accrue to the firm from these processes may be long lasting (Rumelt 1984). Schumpeter, Penrose, and Rumelt each stressed that entrepreneurship is the source of change and growth within a firm. Under this view, firms that seek to change should use externally generated information that is integrated with internal knowledge to develop new ways of exploiting the firm's existing resources.

Sharma and Chrisman defined *corporate entrepreneurship* as the "process whereby an individual or a group of individuals, in association with an existing organization . . . instigate renewal or innovation within that organization" (1999: 18). Thus, corporate entrepreneurship is the deployment of new resource combinations to renew an organization (Guth and Ginsberg 1990). Corporate entrepreneurship can occur internally, by exploiting the firm's existing stock of resources (Penrose 1959), or externally, by the acquisition of new resources (Hitt et al. 1996). However, because most attempts to create value in the external environment through mergers and acquisitions fail (Hoskisson and Hitt 1990), CEOs are increasingly looking inside the firm for new sources of value. The emphasis on creating value *within* the firm was noted by the CEO of one Fortune 500 company who said, "I think innovation, most of the time, is simply taking A, B, C, and D, which already exist, and putting them together in a form called E" (Marshall 1994: 270). This suggests that CEOs who understand a firm's existing set of resources may be in the best position to reconfigure those resources in ways that are newly valuable. Indeed, some have argued that managerial expertise is a key firm resource that, when developed and exploited, has the potential to be a source of sustained competitive advantage (Castanias and Helfat 1991). Castanias and Helfat (1991) used the phrase "managerial rents" to refer to the increase in firm value attributed to superior managerial skills.

CEOs and Corporate Entrepreneurship

Human and social capital have been suggested as the "fundamental building blocks" of corporate entrepreneurship (Greene et al., 1999: 107). Much of the research grounded in this view focuses on the role that individuals within an organization play in corporate entrepreneurship. These individuals are sometimes said to be *corporate venture champions* who are responsible for a particular entrepreneurial process with an organization (Burgelman 1983; Greene et al. 1999; Shane 1994; Venkataraman, MacMillan, and McGrath 1992). For example, the *champion of ideas* is an individual who seeks to convince organizational stakeholders that an idea has merit, whereas the *resource champion* presents the idea to those with the power to allocate the resources needed to complete the project (Venkataraman et al. 1992).

Clearly the CEO is intertwined among the firm's human and social capital that is crucial for fostering corporate entrepreneurship (Greene et al. 1999). While the firm's CEO may not serve as the corporate venture champion (although in some firms, particularly small firms [Miller 1983], the CEO may serve in this capacity), it seems reasonable to argue that the CEO may be a "central actor" in the eventual emergence of many entrepreneurial initiatives (Stopford and Baden-Fuller 1994). Floyd and Wooldridge (1999) defined central actors as key individuals in the firm's communication processes who are also likely to have a direct impact on entrepreneurial initiatives.

Brazeal and Herbert (1999) also suggested that top management plays a key role in corporate entrepreneurship. For example, the entrepreneurial process is enabled by the allocation of resources and the articulation of a strategic vision, roles that are traditionally reserved for top management. In addition, an organization's CEO may foster corporate entrepreneurship "through the building of an entrepreneurial organizational environment and human resource practices that actively promote entrepreneurial activities and thinking" (Brazeal and Herbert 1999: 41). By doing these things, the CEO enhances the firm's ability to produce innovative outcomes. In sum, the CEO may play a key role in corporate entrepreneurship in part, because of his or her knowledge of the firm's resources and his or her abilities to influence the social dynamics within the firm (Floyd and Wooldridge 1999).

CEO Change and Corporate Entrepreneurship

Research has found that firms often replace their CEOs and undertake new strategic initiatives following a decline in performance, although this research has largely ignored the question of whether these changes are valuable (Wiersema and Bantel 1993). The popular press also offers anecdotal evidence that organizations may hire new CEOs to foster corporate entrepreneurship (Iacocca 1984; Sager 1994). However, both empirical and theoretical research offer differing views on the effect that CEO change may have on corporate entrepreneurship.

New CEOs Are Needed

Theoretical arguments that support a change in CEOs as a prelude to corporate entrepreneurship are grounded largely in the organizational theory literature, which suggests that new CEOs are more likely than current CEOs to bring about change in organizations for two reasons. First, new CEOs bring to the firm "new causal knowledge" that allows them to develop "new interpretations" of how the firm should "interact with its environment" (Ford and Baucus 1987; Starbuck et al. 1978). Second, the new CEO is more likely to make changes in the organization because he or she is unencumbered from prior emotional involvement in the organization and is not tied to the organization's "dominant logic" that may lead to such counterproductive behavior as the escalation of commitment to a failing course of action (Brockner 1992; Ford and Baucus, 1987; Prahalad and Bettis 1986; Staw 1981; Tushman and Romanelli 1985).

These arguments suggest that executive succession changes the knowledge base and skill levels of the firm's CEO, which can lead to an improved ability to recognize and respond to the firm's changing environmental conditions. While the old knowledge base may have been suitable for the old environment, the firm's new environment suggests the need for a new knowledge base. Thus, executive succession may be especially important for improving or sustaining firm performance following periods of environmental turbulence (Virany et al. 1992).

While this view is theoretically grounded and intuitively appealing, the acquisition of a new knowledge base through a new CEO is not without cost. Some have argued that new managers incur "liabilities of newness" and need time to understand the firm and its problems (Virany et al. 1992; Sutton et al. 1986). This may prove especially problematic if the new CEO is from a different industry and unfamiliar with the types of resources used in his or her new firm, and if the resources that give the firm its distinctive competencies are difficult to understand or causally ambiguous. Under these conditions, the new CEO will not have the firm-specific skills or the tacit knowledge that the current CEO had, which may be valuable to the process of corporate entrepreneurship. Thus, while it may be obvious "that prior competencies have been rendered obsolete, it may not be clear what the new requisite competencies might be" (Virany et al. 1992: 76).

Current CEOs Are Valuable

Some organization theorists have argued that executive succession may actually have a negative impact on organizational outcomes. These researchers suggest that current CEOs may be a key element in any attempt to successfully change an organization (Amburgey et al 1993; Sutton et al. 1986; Virany et al. 1992). For example, Alchian and Demsetz (1972) argued that a firm's existing CEO has greater knowledge of the productive potential of the firm's resources, and thus a superior basis on which to make judgments about the potential valuable combinations of the firm's heterogeneous resources. Specifically, they argued that "superior combinations of inputs can be more economically identified and formed from resources already used in the organization than by obtaining new resources (and knowledge of them) from the outside" (Alchian and Demsetz 1972: 793). It seems clear that CEOs who have an understanding of the resources that a firm controls and the environment in which it competes should be more likely to pursue corporate entrepreneurship by organizing and combining a firm's resources in valuable new ways than CEOs who do not have this understanding. This suggests that CEOs may be valuable because they have acquired firm-specific knowledge of the firm's resources and its competitive environment (Castanias and Helfat 1991).

Those who assert that new CEOs may be best suited to lead a firm's value creation efforts have failed to recognize that there is a cost associated with replacing a CEO (or else they implicitly assume that new CEOs are always able to compensate for these costs). There are at least two costs associated with replacing a CEO. First is the loss of knowledge about the organization, its resources, and its competition (Castanias and Helfat 1991). CEOs possess three types of skills: generic, industry-related, and firm-specific (Castanias and Helfat 1991). Generic skills are those that can be easily transferred across firms. While these skills may be used to create value, this value is not likely to be long lasting because other firms can easily acquire CEOs who also have these skills. Industry-related skills are those that can be transferred among firms within an industry. Industry-related skills may also be used to create value but this value is also not likely to be long lasting because other firms in the industry may also acquire CEOs with these skills (although the pool of CEOs who possess these skills will not be as large as the pool of CEOs with generic managerial skills). Firm-specific CEO skills are those that are specific to a particular firm and are therefore only useful or potentially valuable within that firm. Thus, firm-specific CEO skills are a potentially valuable resource that may be useful in the process of corporate entrepreneurship.

The second cost associated with CEO change is the loss of valuable relationships or "social complexities" that the current CEO may have developed (Barney 1986). Besides individual differences among CEOs (e.g., stocks of knowledge, life experiences), corporate entrepreneurship is also influenced by complex social interactions among individuals and groups within an organization (Floyd and Wooldridge 1999). Group composition, leadership, cohesiveness, communication, longevity, and group structure have all been hypothesized to affect group creativity and innovation (King and Anderson 1990; Nystrom 1979; Woodman et al., 1993). Some of the subtle effects that groups may have on organizational creativity are through social information in the workplace (Griffin 1983). Social information includes verbal and nonverbal cues and signals that people in organizations provide each other. This information is used to evaluate, prioritize, and "make sense" of the various factors present in the workplace and how these factors may be organized and used to solve problems. In sum, the creative capabilities of groups is not equal to the aggregation of the creative capabilities of individual group members; instead there is a reciprocal relationship. Individual creative capabilities both effect, and are effected by, the creative capabilities within groups (Woodman et al. 1993).

At the individual level, CEOs may be valuable because of the unique stocks of knowledge and information that they possess. However, at the group level, CEOs may also be valuable for reasons that are socially complex (Barney 1986; Castanias and Helfat 1991; Wernerfelt 1989). For example, CEOs may be valuable because of their skills at leading, motivating, and inspiring others within the organization. This assumes that these "others" are then able to create value that would not have been created without the leadership, motivation, and/or inspiration provided by the CEO. CEOs may also be valuable because of relationships that have been developed with others in the organization. These socially complex relationships may involve such things as friendship, teamwork, and the ability to communicate (Wernerfelt 1989). Another possible benefit of this social capital is the development of trust, which can be used to foster creativity and the exchange of resources within the firm (Fukuyama 1996; Woodman et al. 1993). Others have noted that corporate entrepreneurship is dependent on the attitude of individuals within the firm (Stevenson and Jarillo 1990), determined in part of the attitude of the CEO. Finally, CEOs may be an integral part of the organization's culture, and this culture may also be a valuable organizational resource (Barney 1986).

Of course, boards of directors may decide to replace CEOs precisely because they do not have many of these valuable characteristics. Arguably, many CEOs are replaced in anticipation that the new CEO will be better suited to fostering corporate entrepreneurship because of his or her contributions to socially complex relationships within the firm. However, CEOs who are valuable for socially complex reasons are in a unique position (they have valuable firm-specific skills), and new CEOs are likely to need more time to have equal or similar effects within the organization.

Hypothesis 1: CEO change will have a negative effect on corporate entrepreneurship.

Corporate Governance and Corporate Entrepreneurship

Clearly there are contextual factors within an organization that may act to enhance or constrain corporate entrepreneurship and firms may need to alter these contextual factors to encourage innovation. The organization's reward system is one contextual factor that may influence the creative behavior of individuals and groups (Woodman et al. 1993). Changing the reward system to encourage corporate entrepreneurship is consistent with much of the strategy implementation literature that stresses the importance of managerial incentives as a means of controlling CEO actions (Baysinger and Hoskisson 1990; Goodstein and Boeker 1991; Hoskisson, Hitt, Turk, and Tyler 1989). This literature is grounded in agency theory, which suggests that the interests of the parties in an agency relationship may diverge over time and governance mechanisms (e.g., rewards) are needed to realign these interests (Fama and Jensen 1983; Jensen and Meckling 1976). Even if CEOs are capable of fostering corporate entrepreneurship, they may need incentives in the form of executive compensation to actually do so.

Gomez-Mejia and Wiseman (1997) noted that while researchers have a long history of seeking to identify a relationship between executive pay and firm performance, there is very little empirical evidence that this relationship actually exists (Jensen and Murphy 1990; Garen 1994). Henderson and Fredrickson (1996) also noted the nonexistent (or weak) relationship between CEO pay and firm performance and called for research that focuses on the relationship between the substantive nature of the CEO's job and his or her compensation. Carpenter (2000) argued that CEO pay may be a critical determinant of why some firms engage in strategic change and others do not. He argued that a modification of the CEO's pay is needed to encourage a CEO to pursue strategic change. Others have suggested that strategic change is risky from the CEO's perspective and that CEOs should be compensated for assuming this additional risk, along with the additional complexity that managing this change will bring (Henderson and Fredrickson 1996; Sanders and Carpenter 1998).

This study also placed the issue of CEO compensation in an action-based framework by focusing on the desired behavior of the CEO, specifically the quality of the actions taken by the firm. This is consistent with the view that one role of executive compensation is to encourage departures from the status quo (Gomez-Mejia and Wiseman 1997) and implies that changes in CEO compensation are reflected in some action taken in an effort to improve firm performance (in this case, corporate entrepreneurship). Gomez-Mejia and Wiseman (1997) suggested researchers should examine individual elements of the CEO's compensation package, rather than focusing on total compensation. However, which elements of the CEO's total compensation are most like to encourage corporate entrepreneurship? Top managers receive compensation in one or more of the following forms (Castanias and Helfat 1991): salary, bonuses, deferred compensation (e.g., stock options), and perquisites. Wiseman and Gomez-Mejia (1998) argued that managers distinguish between the cash component (salary plus bonuses) of their total compensation and the deferred compensation component.

Wiseman and Gomez-Mejia (1998) contend that because deferred compensation is an unreliable source of income, executives generally consider only their base pay when calculating their perceived wealth. This seems reasonable when one considers that executives make major purchase decisions (e.g., homes) "on the premise, by both the buyer and lender, that the buyer's current base pay will continue indefinitely into the future" (Wiseman and Gomez-Mejia 1998: 140). Thus, threats to the cash component of a CEO's pay would seem to be of greater concern to the CEO than threats to his or her deferred compensation (Wiseman and Gomez-Mejia 1998).

Decreasing the CEO's cash compensation may motivate the CEO to pursue corporate entrepreneurship because it signals that the board of directors recognizes the firm's decline in performance, holds the CEO responsible, and suggests that continued declines in firm performance will not be tolerated.[1] Unlike a change in deferred compensation, a reduction in cash compensation is immediate and real. It hits the CEO hard in his or her paycheck. A reduction in cash compensation following a period of declining performance also implies that an *increase* in cash compensation will follow a period of *improved* performance. This suggests that the CEO will realize personal benefits from the pursuit of corporate entrepreneurship immediately, rather than having to wait and receive a reward through deferred compensation.

The notion of reducing the CEO's cash compensation following a period of performance decline in an effort to induce desired managerial actions is also consistent with the long-held tenants of operant conditioning theory (Skinner 1969). Skinner argued that people will seek to perform tasks that lead to desired outcomes while avoiding behaviors that lead to undesired outcomes. By "linking the performance of *specific behaviors* to the attainment of *specific outcomes*," organizational members can be motivated to achieve desired organizational goals (Jones, George, and Hill 2000: 442, emphasis in the original). Negative reinforcement, which is the removal of an undesired outcome (the decrease in cash compensation) upon the performance of a specific behavior, may be useful in achieving desired organizational outcomes (e.g., corporate entrepreneurship). The use of financial reinforcers (money) as an outcome of desired behaviors has been found to be particularly effective because employees can exchange money for other desired outcomes (e.g., goods and services) (Komaki, Coombs, and Schepman 1996). In sum, a reduction in the CEO's cash compensation following a period of poor firm performance should provide the CEO with an incentive to improve the firm's performance (through corporate entrepreneurship) while an increase in cash compensation following a period of poor performance provides a disincentive for corporate entrepreneurship.

Hypothesis 2: Changes in the CEO's cash compensation will be inversely related to corporate entrepreneurship.

Methods

This section examines the outcomes from a sample of 100 single-product manufacturing firms. The results suggest that firms that retain their current CEO and decrease the CEO's cash compensation are most likely to engage in corporate entrepreneurship.

Sample

The population for this study included all single-product manufacturing companies from 1982 to 1994 identified in the COMPUSTAT database. A company was considered a single-product company if at least 95 percent of its sales came from one segment (Rumelt 1974). A total of 980 firms was identified that met this criterion. The focus of this study was on internal corporate entrepreneurship. Thus, single-product firms were chosen because diversified firms are likely to innovate by engaging in external innovation by changing the mix of businesses within their portfolio (Hitt et al. 1996). Using only single-product manufacturing firms also increased the homogeneity of the population and simplified some of the measurement issues.

Brazeal and Herbert (1999) argued that a change in environmental conditions, such as a decline in firm performance, can foster corporate entrepreneurship by creating an opportunity for innovation to occur. Thus, firms were identified that had suffered a decline in performance on the belief that these firms would be likely to engage in corporate entrepreneurship. Jensen's alpha (Jensen 1968, 1969) is a commonly used measure to assess a firm's performance relative to other firms in the stock market (Hoskisson, Johnson, and Moesel 1994). Specifically, it represents the average return for a particular firm's stock over (or under) that predicted by the capital asset pricing model (CAPM), given the firm's beta and the average market return. Thus, it indicates the extent to which a firm has met, failed to meet, or exceeded investors' expectations during the year, compared to a portfolio of firms having a similar risk profile (Lubatkin and Rogers 1989). To be selected for the sample, a firm needed at least two years of successful performance (exceeding or meeting investors' expectations) followed by a year of decline (failing to meet expectations). The year of decline was identified as time (t). Using these criteria, a sample of 200 firms was identified and no firm appeared in the sample more than once.[2]

Measures

No empirical studies were found that addressed the time period between the occurrence of lower than expected firm performance and action by management aimed at improving firm performance. However, some have suggested that this time period is relatively short (less than one year) (Hoskisson et al. 1994). Thus, for purposes of this study, the year following a decline in performance ($t+1$) was considered the time period during which firms would be most likely pursue corporate entrepreneurship as a means of improving firm performance.

Corporate Entrepreneurship. The *Wall Street Journal* index and the Lexis/Nexis database were used to identify announcements by firms of changes that they intended to make during the year ($t+1$). To be considered corporate entrepreneurship, the announcement had to involve changes to the firm's products, product markets, processes, or technologies. This is consistent with Brazeal and Herbert's definition of innovation as involving the "refinement or modification of existing policies, procedures, product lines, and services" (1999: 36). Operationalizing corporate entrepreneurship in this manner is also consistent with Venkataraman and his colleagues who viewed corporate entrepreneurship as a process "by which members of an existing firm bring into existence products and markets which do not currently exist within the repertoire of the firm" (1992: 488).

Of the 200 firms in the initial sample that had experienced a decline in performance, only 103 firms made some type of announcement regarding new products, product markets, processes, or technologies during the year that followed their year of decline. A summary of these announcements, along with a brief description of the firm and its competitive environment, were provided to an expert panel for coding. The use of a panel to subjectively rate the quality of managerial behaviors (e.g., corporate entrepreneurship) seems an appropriate methodology because "behavior criteria normally involve subjective assessments about executive behaviors" (Gomez-Mejia and Wiseman 1997: 321). The panel was instructed not to consult with each other or with outside sources when coding the announcements and to use only their professional judgment, education, and experiences (along with the information provided) in coding the announcements.

The panel consisted of four doctoral students, majoring in strategic management, who were at the dissertation stage. Each of the students held a master of business administration (MBA) degree before beginning their doctoral program and had an average of 6.5 years of industry work experience. Three of the four panelists worked in the area of asset valuations with Fortune 500 companies. The topics of the students' dissertation research closely paralleled the topics of the announcements they were asked to code (e.g., strategic management of innovations, international strategies, strategic alliances).

The panel was asked to identify those announcements most likely to be perceived by the firm's investors (or potential investors) as valuable new products, product markets, processes, or technologies. They were also asked to consider whether this value would be difficult for competing firms to imitate within one year. The dependent variable, corporate entrepreneurship (CE), was dummy coded (1,0) for the presence or absence of a valuable announcement regarding new products, product markets, processes, or technologies that should be difficult to imitate within one year. Cronbach's alpha was used to test for interrater reliability and it exceeded .70 in all cases.

Change in CEO. CEO change was operationalized as a change in the firm's chief executive officer (NEWCEO). This variable was dummy coded (1=change in CEO, 0=no change) during the year of decline (*t*) as disclosed in the company's 10-K report.

Change in CEO Cash Compensation. The percentage change in the CEO's cash compensation (salary plus bonuses) following the year of declining performance was used to operationalize this variable (cash compensation in *t+1* minus cash compensation in *t* divided by cash compensation in *t*). These data (CASHCOMP) were obtained from each firm's 10-K report.

Control Variables

Slack. Both too much and too little slack have been found to be detrimental to innovation (Nohria and Gulati 1996). Because it is difficult to predict the effect that slack may have on corporate entrepreneurship, slack was used as a control variable. Slack was operationalized as working capital adjusted for size (current assets minus current liabilities divided by total assets) in the year of decline (*t*). This operationalization captures a firm's ability to meet its immediate resource needs and is a measure of immediate slack. The source for these data was COMPUSTAT.

Firm Size. The natural log of a firm's total assets during the year of decline (*t*) was used to control for firm size because firm size has been argued to affect the ability of a firm to change (Thompson 1967). The source for these data was COMPUSTAT.

CEO Power. Power is the ability to get others to do what you would want them to do. If a single individual is powerful and creative, then CEO power should have a positive effect on corporate entrepreneurship (Mone, McKinley, and Barker 1998). However, if corporate entrepreneurship is viewed as the outcome of social interaction that occurs within groups, then a powerful CEO may actually stifle corporate entrepreneurship. Because it is easy to believe that CEO power could have an effect on corporate entrepreneurship, but difficult to predict the direction of that effect, CEO power is treated as a control variable (Gray and Ariss 1985).

Finkelstein (1992) defined *structural power* as power that arises from "the distribution of formal positions within an organization. The greater managers' structural power, the less their dependence on other members of the dominant coalition" (1992: 512). To operationalize structural power, Finkelstein (1992) created a structural power scale that included "cash compensation of an executive divided by the compensation of the highest paid manager in the same firm" and noted that "compensation can be considered an important indicator of formal power" (1992: 512). Others have found that powerful CEOs may use their power to "help them obtain higher levels of compensation" (David, Kochhar, and Levitas 1998: 204). In the research reported here, power was operationalized as the proportion of the CEO's salary relative to other members of the firm's top management team (vice president level and above) was operationalized. These data were obtained from each firm's proxy statement during the year *t+1*.

Statistical Analyses

Missing data reduced the sample size from 103 firms to 100 firms. While the reduction in sample size was very small, it was tested for differences between these two samples. There were not statistically significant differences (using t tests) between the reduced sample and the

Table 1
Means, Standard Deviations, and Pearson Correlation Coefficients

Variable	*N*	*Means*	*s.d*	*1*	*2*	*3*	*4*	*5*
1. Corporate entrepreneurship	100	0.17	0.377					
2. CEO change	100	0.110	0.314	.266[c]				
3. Cash compensation	100	0.114	0.358	.185[a]	-.085			
4. Power	100	0.393	0.129	.042	-.220[b]	-.199[b]		
5. Size	100	3.221	1.572	.079	.043	.398[d]	-.049	
6. Slack	100	0.405	0.269	.040	-.117	.179[a]	.171[a]	.092

a. $p < .10$
b. $p < .05$
c. $p < .01$
d. $p < .001$

Table 2
Results of Logistic Regression Analysis and Significance Tests: Corporate Entrepreneurship

	N	*Chi-Sq*
Model	100	13.882[b]
Independent Variable	Parameter Estimate	Chi-Sq
Intercept	3.524	8.604[c]
CEO change	-2.384	8.874[c]
Cash compensation	-1.853	4.719[b]
Slack	-0.106	0.008
Size	0.081	0.176
Power	-3.654	2.579[a]

a. $p < .10$
b. $p < .05$
c. $p < .01$

larger sample in terms of firm size or slack. The following logistic regression model was used to test the hypotheses:

$CE=b_0+b_1NEWCEO+b_2CASHCOMP+b_3SLACK+b_4SIZE+b_5POWER+e$ (equation 1)

Results

Table 1 presents the means, standard deviations, and correlations of the variables used in this study. The results of the logistic regression model used to test the hypotheses are presented in Table 2. The overall model had a chi-square statistic of 13.882 which was statistically significant ($p<.05$). CEO change ($p<.01$) and change in the CEO's cash compensation ($p<.05$) were statistically significant and both had negative signs. Among the control variables, CEO power ($p<.10$) was statistically significant and had a negative sign. Firm size and slack were not statistically significant.

These results support hypothesis 1, which stated that CEO change would have a negative effect on corporate entrepreneurship. The percentage change in the CEO's cash compensation also had an inverse relationship to corporate entrepreneurship, which supports hypothesis 2. Powerful CEOs have a negative effect on corporate entrepreneurship while entrepreneurship does not appear to be influenced by organizational size and slack.

Innovation is a rare event (Simon 1993). Thus, it seems reasonable to argue that corporate entrepreneurship among poorly performing firms would be a relatively rare occurrence. Only 17 percent of the firms in this sample exhibited corporate entrepreneurship, which is consistent with expectations and offers face validity for the measure that was used. A post-hoc analysis was also conducted to further test the validity of the coding methodology used to operationalize corporate entrepreneurship. If these announcements are truly indicative of corporate entrepreneurship, then they would be expected to have a positive effect on firm performance. Ordinary least squares regression was used to estimate a model to test the influence of these announcements on firm performance (operationalized as the firm's return on investment [ROI] in time *t+1*). ROI has been suggested as an appropriate performance measure to assess the success of corporate ventures (Elder and Shimanski 1987). After controlling for ROI in time *t*, the announcements that were coded by the panel had a positive effect on ROI in time *t+1* ($p<.05$), which suggests the announcements that were coded by the panel as entrepreneurial events had a positive effect on ROI. The finding from this post-hoc analysis provides additional evidence of construct validity for the coding methodology used in this study.

Finally, logistic regression allows the computation of probabilities for the presence of corporate entrepreneurship (CE=1). The coefficients are interpreted the same as in ordinary least squares regression except that they refer to the probability of the dependent variable being present, rather than to the level of the dependent variable (Aldrich and Nelson 1984). Using equation 2, values for the variables can be substituted and then multiplied by the coefficients from Table 2 to arrive at the probability of corporate entrepreneurship under various conditions (Mendenhall and Sincich 1989). This analysis provides a clearer picture of the effects of changes in the independent variables on the probability of CE=1.

$$\text{Probability CE=1} = \frac{b_0+b_1(\text{CASHCOMP})+b_2(\text{NEWCEO1})}{1+b_0+b_1(\text{CASHCOMP})+b_2(\text{NEWCEO1})} \quad \text{(equation 2)}$$

The mean change in cash compensation for CEOs in the sample was an increase of 11 percent with a standard deviation of 36. Table 3 presents the probabilities of corporate entrepreneurship under the conditions of CEO change and no CEO change, when the percentage change in cash compensation is zero, is decreased by one standard deviation from the mean (–25%), is at the mean (11%) and is increased by one standard deviation above the mean (+47%). With no CEO change, the probability of corporate entrepreneurship *increases* as cash compensation is *decreased*. This analysis provides additional support for hypothesis 2, which predicted that changes in a CEO's cash compensation will have an inverse relationship with corporate entrepreneurship. Also note from Table 3 that the probability of corporate entrepreneurship when there is no change in the CEO's cash compensation is 78 percent when the current CEO is left in place but only 53 percent if the firm hires a new CEO. This analysis provides additional support for hypothesis 1, which predicts that CEO change will have a negative effect on corporate entrepreneurship. Consistent with the theoretical arguments, the probability of corporate entrepreneurship following a decline in firm performance is maximized by retaining the current CEO and decreasing his or her cash compensation, while the probability of corporate entrepreneurship is minimized by hiring a new CEO.

Discussion

Most studies of CEO change have focused on the effect of executive change on subsequent firm performance (Kesner and Sebora 1994). However, these new CEOs must first "do something" before firm performance can be affected and relatively few studies have focused on the effect that CEO change has on these other "intermediate" organizational outcomes (Friedman and Saul 1991; Greiner and Bhambri 1989; Miller 1993; Welsh and Dechler 1988). If corporate entrepreneurship, such as innovation and creativity, is the basis for competition among organizations (Penrose 1959; Rumelt 1984; Schumpeter 1942), and if organizations often experience CEO change, then understanding the effect that CEO change has on corporate entrepreneurship has important implications for both research and practice.

The theoretical arguments offered in this article for the important role that existing CEOs play in corporate entrepreneurship are grounded in the belief that corporate entrepreneurship is the result of people working together in a social context and that disruptions to this social context (e.g., CEO change) will serve to constrain rather than foster corporate entrepreneurship. This view, and the supporting empirical results, are consistent with a narrow stream of research that has argued for the recognition that "old" CEOs may represent a potentially valuable organizational resource (Sutton et al. 1986; Virany et al. 1992; Castanias and Helfat 1991). New CEOs are less likely to be valuable because they incur liabilities of newness (Amburgey et al. 1993) and need time to understand the firm's resources, routines, and social relationships that are necessary for corporate entrepreneurship.

Firms that change CEOs might reduce their liabilities of newness by selecting an insider to succeed the current CEO. Insiders would possess firm-specific skills that could be useful in corporate entrepreneurship. However, even though an "insider CEO" would have presumably been a member of the old top management team, the social complexities developed by the old CEO are disrupted or destroyed. Selecting an insider to lead the firm does little to attenuate the loss of social complexities within the firm, particularly since many old members of the top management team may feel compelled to leave the firm to make way for a new team (Keck and Tushman 1993). CEO succession, even by insiders, is likely to disrupt organizational momentum and alter the context and conditions under which the top management team operates (Keck and Tushman 1993; Miller 1993). The data in this study also seem to support these arguments.

Table 3
Probabilities of Corporate Entrepreneurship Under Conditions of CEO Change and No CEO Change at Four Different Levels of Cash Compensation

		CEO Change	
		Yes	*No*
Percentage change in the CEO's cash compensation	-25%	.61	.80
	-0-	.53	.78
	+11%	.48	.77
	+47%	.20	.72

Among the 100 firms in the sample, 17 exhibited corporate entrepreneurship and only 5 of these changed CEOs. Of these 5 new CEOs, 4 where insiders and 1 was a related outsider. In all, 11 firms in the sample hired new CEOs and 5 of these demonstrated corporate entrepreneurship. Of the 6 firms with new CEOs that failed to demonstrate corporate entrepreneurship, 4 were insiders and 2 were related outsiders. Thus, even though almost all of the new CEOs possessed firm-specific knowledge, only about half of those new CEOs were able to use that knowledge to pursue corporate entrepreneurship. This seems to indicate that social complexities within the organization play an important role in corporate entrepreneurship (Floyd and Wooldridge 1999; Greene et al. 1999), perhaps a more important role than specific knowledge of the firm's resource base.

At least one qualification seems in order to the finding that CEO change has a negative effect on corporate entrepreneurship. The announcements were collected in the year following a decline in firm performance (*t+1*) and CEO turnover was measured at the end of the year of decline (*t*). It is possible that organizations that changed CEOs eventually exhibited corporate entrepreneurship and that CEO change delayed, rather than stifled, the creativity of those within the organization. Thus, to be more precise, changing CEOs had a negative effect on corporate entrepreneurship immediately following the year of succession (*t+1*). Whether this effect holds in subsequent years is an interesting question for future research.

The results of this study also support the arguments made by Woodman and his colleagues (1993) that contextual factors, such as the organization's reward system, may be used to foster, or inhibit, creativity by individuals working together in a complex social system. This argument, grounded in agency theory, suggests that an organization's incentive system may be used to align the actions of managers with the goals of the shareholders, and has received widespread support in other research studies (Baysinger and Hoskisson 1990; Goodstein and Boeker 1991; Hoskisson et al. 1989). The results presented in this study, point to the fact that cash compensation plays an important role in encouraging CEOs to pursue corporate entrepreneurship. Specifically, *reducing* a CEO's cash compensation following a period of performance decline appears to encourage corporate entrepreneurship. This argument is also supported by Carpenter (2000), who found a negative relationship between changes in the cash component of the CEO's salary package and subsequent strategic change (measured by deviation from industry strategy norms).

Interestingly, while all of the firms in the sample experienced a decline in firm performance, the average change in the CEO's cash compensation following this year of decline was an *increase* of 11 percent. At least two inferences can be drawn from this observation. First, much work remains to be accomplished by boards of directors in the areas of corporate governance in general, and CEO compensation incentives in particular. Second, it should not be surprising that only 17 percent of the firms in the sample exhibited corporate entrepreneurship following the year of decline if the average CEO enjoys cash compensation increases of 11 percent during this period regardless of any firm innovations. This also appears consistent with a proposition by Gomez-Mejia and Wiseman (1997: 359) that executive compensation designs similar to those of competitors (e.g., those that increase CEO pay despite a decline in performance) will serve to foster strategic conformity rather than strategic change.

Conclusions

This research has explored the effect of CEO change on corporate entrepreneurship following a year of poor firm performance. Given the frequency of CEO change within organizations and the role of corporate entrepreneurship in gaining and sustaining a competitive advantage, the findings from this study have interesting implications for both academic researchers and management practitioners. Conventional wisdom suggests that when firm performance suffers, firms often need new CEOs. However, this research found that CEO succession has a negative effect on corporate entrepreneurship, perhaps because of the loss of firm-specific skills and the disruption of social complexities within the firm. Clearly there are cases when new CEOs are needed to lead an organization. However, replacing a CEO simply because a firm has experienced a decline in performance may be analogous to replacing a bus driver just because he or she made once a wrong turn and became lost. By changing CEOs, firms may be eliminating the one person who not only may know where the firm took a wrong turn, but also may know how to lead the organization back on the road to recovery.

Acknowledgments

An earlier version of this article was presented at the 1999 annual meeting of the Academy of Management, Chicago, Illinois. The author wishes to thank Allen Amason, Richard Woodman, Mason Carpenter, and Jim Bloodgood for their assistance on earlier drafts of this manuscript.

Endnotes

1. The CEO's employment contract may be structured so that cash compensation is automatically reduced when performance suffers without any additional action by the firm's board of directors. This suggests that the board may be fulfilling its fiduciary oversight role on behalf of the firm's shareholders, in part, through the incentives provided in the CEO's employment contract.
2. For a detailed explanation on the calculation of Jensen's alpha, see Hoskisson et al., 1994, p. 1221.

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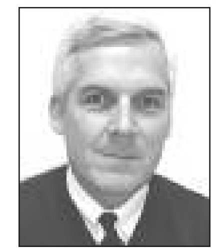

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Ethnic Entrepreneurship: Do Values Matter?

Michael Morris
Minet Schindehutte
Jack Lesser

While considerable attention has been devoted to the personality traits of entrepreneurs, less attention has been given to their values, especially outside of a Western context. Values are instrumental in the decision to pursue entrepreneurship, and have implications for the entrepreneur's approach to creating and managing the venture. The role of values would seem especially relevant in the context of ethnic subcultures. Values traditionally associated with entrepreneurship, such as risk, individualism, competitiveness, wealth generation, and growth, may be more consistent with Western cultures, and may conflict with closely held values within various ethnic subcultures the world over. This article examines the values of entrepreneurs in two ethnic subcultures within South Africa. Findings are reported from interviews with cross-sectional samples of black and colored entrepreneurs. The results indicate entrepreneurs tend to embrace common values regardless of their individual ethnic heritage, but with different underlying patterns. In addition, the entrepreneurial path itself gives rise to certain shared values; and the overarching country culture has a strong influence on value orientations. Implications are drawn from the results, and suggestions made for ongoing research.

Entrepreneurship is the driving force in economic development throughout the world. Yet, some have argued that entrepreneurship is fundamentally a values-driven activity (Berger 1991; Lipset 2000). Kilby (1993) notes that values are instrumental in advancing constructive understanding of human behavior and consequent change. Thus, it would seem that personal values should have important implications not only for the decision to pursue entrepreneurship, but the way in which the entrepreneur approaches a venture (Gasse 1977; Bird 1989; Bryan 1999).

A notable lack of attention has been devoted to the role of values in successful entrepreneurial endeavors. Typically, such Western values as individualism, competitiveness, material gain, and a strong work ethic are implied or explicitly integrated into discussions of entrepreneurship, regardless of where it occurs (Cauthorn 1989; Hebert and Link 1988; Schumpeter 1950). However, these values are not pervasive in a number of cultures and ethnic communities, and may be less prevalent in some developing economies. Given that ethnic communities are increasingly participating in the global entrepreneurial renaissance, what are the implications of their unique value systems?

Values reflect the entrepreneur's conscious view of himself or herself (Feather 1990). Moreover, the conscious view (or belief) that one has about himself or herself directly shapes movement toward action, or one's motives (McClelland 1961). For members of ethnic groups, it would seem that values of the subculture could become internalized to the point that they affect entrepreneurial motives and behaviors. Thus, values of bravery, wisdom, or respect for earth shared by Native Americans might manifest themselves not only in career choices, but in the entrepreneur's approach to opportunity identification or network building. For an indigenous Australian, a value of community sharing of assets could significantly constrain the ability of the entrepreneur to grow a venture.

This current study explores the personal and business-related values of entrepreneurs from different ethnic groups in South Africa, a developing economy. The extant literature is reviewed to identify relevant issues surrounding values and their potential implications for entrepreneurial behavior. Based on this background, survey research is directed at samples of black and colored entrepreneurs based in South Africa. Results are reported for each of these ethnic groups, and differences between them are assessed. Implications are drawn for theory and practice, and suggestions made for ongoing research.

Literature Review

A review of the literature addressed the nature of values, values and culture, and the culture's consequences on values and entrepreneurship.

The Nature of Values

Value is "a broad tendency to prefer certain states of affairs over others" (Hofstede 2001, 5). Rokeach (1972, 159) explains that "to have a value" is to maintain an enduring belief that a specific mode of conduct or end-state of existence is preferable to the alternatives. Schwartz (1992, 4) characterizes values as: (1) concepts or beliefs that (2) pertain to desirable end-states or behaviors and (3) transcend specific situations in (4) guiding selection or evaluation of behavior and events, and (5) are ordered by relative importance.

Values are related to but different from personality. A common approach to personality is trait theory, and this has been applied extensively in the entrepreneurship research. Thus, entrepreneurial behavior has been associated with having an internal locus of control, being a calculated risk-taker, and having a higher tolerance of ambiguity, among other traits (e.g., Bird 1989). A *trait* is a characteristic or typical pattern of individual behavior, where combinations of traits are often used to distinguish personality types (Eysenck and Rachman 1965). Unlike values, traits can be inherited as well as learned. However, many traits imply the development of certain values. For instance, because of his or her sense of self-responsibility for events, a person with a strong internal locus of control might be expected to more highly value individualism. Further, traits can acquire values, such as the person who values being adventurous or being independent.

There is also a close relationship between values and motives. Motivation has received considerable attention in the entrepreneurship literature, ranging from McClelland's (1961) work on the central role of achievement motivation to the importance of "push" versus "pull" factors in triggering the pursuit of self-employment (Morris 1998). A motive leads one to act. All motivation involves valuing, at least implicitly, but only certain motives are consciously felt. The experience one has in carrying out a motive is what tends to produce conceived values, or values of which a person is aware and attaches importance. Higgins (2000) argues that values provide regulatory focus for motivated or goal-directed action. When a person has certain values (e.g., life excellence, social conformance), he or she strives to be internally consistent through their motives and actions, and uses values to guide these motives and actions. Heider (1958), in his seminal work on attribution theory, notes that the inability to "balance" values and motives is discomforting.

To understand the role of values in motivating behavior, one must first sort through the range of possible values, a challenging task. Bales and Couch (1969), in considering close to 900 different values used in various questionnaires, reduced the set to four clusters: authority, self-restraint, equality, and individuality. Musek (1993) conducted similar work with 54 values, identifying four underlying categories: hedonistic, moral, achievement, and fulfillment. Using 56 commonly cited values and over 25,000 respondents, Schwartz (1992) noted the existence of 10 basic categories: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security.

Values can be preferred modes of conduct (instrumental) or they can be desirable end-states of existence (terminal) (Rokeach 1967). For instance, honesty might be an instrumental value, while a sense of self-fulfillment would be a terminal value. Rokeach (1967) believed most people had roughly 18 terminal values and 60 instrumental values.

Finally, values exist at different levels. Hence, certain values are thought to be more universal, such as those that relate to such fundamental questions as the temporal focus of human life. Others might relate to the political structuring of a nation, behaviors of a social class, or a particular institution such as marriage and the family. An especially relevant value context for the current study is one's work life. Kilby (1993) distinguishes between values realized in one's occupation and values assigned to occupations. Thus, such values as accomplishment, personal growth, warm relationships, and high income might be realized in one's occupation, while "challenging", "fun", "boring," and "dangerous" represent types of values associated with different occupations.

Values and Culture

Values are learned predispositions. They represent learned mechanisms for bringing about positive consequences or avoiding negative ones with respect to the surrounding environment (Hofstede 2001). Moreover, values are held by individuals as well as by collectives (Kilby 1993; Kluckhohn 1951). Where a collective is involved, values become a component of culture together with such other components as symbols, rituals, artifacts, and heroes.

Culture occurs within the context of a social unit or group. It consists of patterned ways of thinking, feeling, and reacting (Kluckhohn 1951). Cultural values are widely held and kept intact through pressure from the unit or group. Hence, the existence of a norm implies a value that is shared by a collective. In an entrepreneurial context, where a value associated with economic innovation or individual success is inconsistent with the conventional traditions of a culture, the entrepreneur is likely to be frowned upon or even hated by others belonging to the cultural group (Lipset 2000).

Cultures exist at multiple levels, from broad macrocultures (e.g., nation, gender, ethnic, racial group) to more narrow microcultures (e.g., corporation, neighborhood, family). While typically at a relatively slow pace (especially for macrocultures), cultural values evolve over time. Cultures are need-gratifying, and as hierarchies of needs change, the ability of particular aspects of a culture to help individuals satisfy those needs lessens. The culture adapts to better serve its members.

At a national level, seminal research on value differences among cultures can be found in the work of Hofstede (2001). He provides evidence to support the existence of five underlying dimensions of national culture. Differences among nations in terms of these dimensions are then associated with such variables as occupational mobility, press freedom, and economic development. Extensive work has also been done at the level of the subculture. An example can be found in the work of Aberle (1967), who noted among the Hopi American Indian prevailing values of harmony with nature, peacefulness, cooperation, self-control, conservatism, and collectivism.

Values and Entrepreneurship: Culture's Consequences

Research on economic development has focused extensively on the critical role of environmental conditions, including such factors as capital accumulation, the political and economic infrastructure, availability of skilled labor, and other structural aspects of a community or society (e.g., Davidsson 1993; Morris 1998). As a case in point, Davidsson and Wiklund (1997) found that local economic structural conditions explained more of the variation in new firm formation rates in Sweden than did cultural factors.

Alternatively, sociologists have stressed the importance of cultural factors, and especially values, in facilitating development. Perhaps the most noted work in this regard is McClelland (1961), who demonstrated a relationship between the need for achievement in a society and the rate of economic development. Lipset (2000, 110) summarizes the prevalent thinking in claiming that "structural conditions make development possible; cultural factors determine whether the possibility becomes an actuality." Looking historically, Berger (1991) concludes that culture and economy are "twin-born," and argues that cultural modernization, as reflected in changes in key values, beliefs, and behaviors, more often than not has preceded economic development.

To the extent that values matter, how do they specifically relate to entrepreneurship? Historically, the phenomenon of entrepreneurship itself has been associated with values of innovation and change (Schumpeter 1950; Mueller and Thomas, 2000), individualism (e.g., Holt 1997; Komives 1972), independence (Hornaday and Aboud, 1971), achievement (McClelland, 1961), personal gain and profit (Cauthorn 1989; Knight 1942), competition, hard work (Weber 1930), success (Bird 1989), risk (Knight 1921), and private ownership (Hebert and Link 1988).

Beyond McClelland's work on achievement, there have been limited attempts in the literature to determine if entrepreneurs have common values or value sets. For instance, Hornaday and Aboud (1971) found that entrepreneurs tended to value achievement, independence, and effective leadership more than did the general population. Others have found entrepreneurs score lower on support, conformity, and religious value scales (Komives 1972), and are no different than others in their value for money and fame (Hull et al. 1980.)

A small number of studies have attempted to link values, entrepreneurship, and culture, with the latter examined both at the societal and subcultural levels. At a societal level, differences in underlying value systems have been associated with varying rates of new business formation across nations (Huisman 1985; Shapero and Sokol 1982). For example, development of North America is attributed in part to the Protestant ethic, while the slower development in Latin America has been associated with family particularism, dislike for impersonal over personal arrangements, preference for social prestige over money, and disinclination to sacrifice personal authority to group decisions, among other values (Cochran 1959; Lipset 2000). Mueller and Thomas (2000) were able to demonstrate that national cultures that were higher on Hofstede's dimension of individualism and lower on uncertainty avoidance tended to produce young people who are stronger on traits associated with entrepreneurship (internal locus of control and innovativeness). Alternatively, McGrath, MacMillan, and Scheinberg (1992) determined that entrepreneurs scored significantly higher on values of power distance, individualism, masculinity, and lower on uncertainty avoidance, than did nonentrepreneurs, and that these results held regardless of national culture.

With some exceptions, values of entrepreneurs at the subcultural level have received scant attention. Foley (2000) examined indigenous Australian entrepreneurs and found little regard for money, but high values for maintaining their culture, creating a better life for children, and religion. He also noted that they struggled with a traditional value of sharing business assets with the community, and tended to do so only after making a success of the venture.

In the United States, DeCarlo and Lyons (1979) demonstrated that minority female entrepreneurs differed from nonminority females in that the former scored higher on values of conformity and benevolence, while the latter scored higher on values of achievement, support, recognition, and independence. Both groups scored higher than did the general female population on achievement, autonomy, and aggression. Research by Watson and Simpson (1978) was not able to identify significant differences in the personal values of black versus white entrepreneurs. However, a subsequent study demonstrated more strongly held values of collectivism, duty, rationality, novelty, materialism, and power among minority entrepreneurs compared to nonminority entrepreneurs (Enz, Dollinger, and Daily 1990). Of relevance is the fact that these authors did not find differences among subcultures within the minority sample, which included blacks, Hispanics, Asians and Native Americans. Separately, Garsombke and Garsombke (1999) note a strong community orientation among Native American entrepreneurs when compared to other entrepreneurs. Gasse (1977) uncovered a tendency for English–Canadian entrepreneurs to value open-mindedness and tolerance more than did French–Canadians.

It would seem that an individual's values affect not only his or her decision to pursue entrepreneurship, but the nature of the entrepreneurial pursuits. The latter would include not only the types of ventures pursued but also the manner in which the entrepreneur approaches the venture creation process. Other than Gasse's (1977) finding that value for open-mindedness affected the tendency to innovate and grow faster, no empirical evidence exists regarding such a relationship. However, Bryan's (1999) case studies involving Sioux Indians provides illustrations of ways in which traditional tribal values manifest themselves in various aspects of the new venture creation and growth process.

The Study

This review of the literature illustrates our limited understanding of the role of values in economic development outside of a Western context. The area of ethnic entrepreneurship is of special concern, as subcultures within countries are likely to become an increasing source of entrepreneurial activity in the years ahead. Accordingly, a critical need arises for richer insights into cultural values and their implications for the successful pursuit of entrepreneurship.

To assess the nature of value structures of entrepreneurs from different subcultures, an exploratory study was conducted in South Africa. The South African context is one that has experienced significant turbulence and transformation in recent years. The dismantling of apartheid and transition to a majority government resulted in the reinstatement of fundamental economic and civil rights to the non-white population. The past decade has witnessed the reintroduction of global competition, rapid technological change, and emergence of a powerful labor movement. Further, the economy can be characterized in terms of high interest rates, significant levels of unemployment, and an ongoing devaluation of the rand.

South Africa is both a "first world" economy with a well-developed infrastructure and technologically advanced business environment, and a "third world" economy with a sizeable informal sector, large numbers of undereducated and unskilled workers, and high rates of poverty and crime. It is also a highly diverse society, with sizeable black, white, colored, and Indian communities, and various subcultures within these communities. Today, the country faces the unique economic development challenge of attempting to correct past wrongs while also becoming globally competitive. Entrepreneurship is a key element in addressing this challenge.

While the political struggle over apartheid largely focused on white versus non-white South Africans, the non-white population is anything but homogeneous. As a case in point, significant differences exist between the black and colored communities. Each of these groups has a unique South African history, including their experiences before and during apartheid. They differ in terms of language, observed rituals, and political issues. They frequently attend different schools, live in different neighborhoods, belong to different churches, and work in different places.

In terms of the cultural underpinnings of the black community, the concept of *ubuntu* is meant to capture a pervasive set of beliefs, values, and behaviors among blacks. It centers on humaneness, which encompasses a strong sense of caring and community, harmony, hospitality, respect for others, and responsiveness (Mangaliso 2001). Others have suggested that members of the black community place a primacy on the importance of ancestors, sharing, warm relationships with others, a circular perspective on time, and an external locus of control (Comaroff and Comaroff 1989). The vestiges of apartheid have certainly influenced black culture, and this influence is manifested in attitudes toward entrepreneurship. The black community is one in which business has not enjoyed a high status. In times past, those who succeeded in business could be viewed as collaborating with the white minority. There is some evidence to suggest that when blacks have succeeded in business it has been more a function of individual effort and less the result of supportive networks (Godsell 1991). Moreover, the main justification for starting a business has tended to be creation of employment, with the majority of black-owned small businesses found in the informal sector.

The colored population is one that has long been caught in between, as reflected in the observation, "under apartheid, we were not white enough, today we are not black enough" (*The Economist* 2001). Many of the forbearers of today's colored community were brought to South Africa as servants or slaves. It is a community that evolved from the melding of peoples imported from Madagascar, Ceylon, Bengal, and the East Indies, together with the local Khoisan people and transplanted Europeans. A strong sense of identification with their community exists among the 3.8 million colored South Africans. It is a group that remains geographically concentrated in the Western Cape Province. Religion especially resonates in the colored community, where association with the Muslim faith features prominently. Sport also resonates within this community, with great pride taken in colored athletes who succeed professionally or on national teams. In a commercial context, there is significant small business activity, much of it in the formal sector, and a significant ethnic economy. Members of the colored population are more likely than blacks to rely on networks within their community in building their businesses.

In a very real sense, then, each of these groups lives in a different world, each with its own distinctive array of attitudes and perceptions, opportunities, and constraints. While contemporary data are unavailable regarding levels of entrepreneurship within these ethnic communities, it would seem that entrepreneurial activity would be influenced by the underlying values and norms shared by members of the respective groups (Aberle 1967; Berger 1991; Bryan 1999; Godsell 1991). At the same time, there is evidence to suggest that entrepreneurs are fairly consistent in value orientations across countries (McGrath, MacMillan, and Scheinberg 1992). Accordingly, a study was designed to test the following central hypothesis:

H1: There are no differences in the personal and business value priorities of black versus colored entrepreneurs.

H2: Black and colored entrepreneurs will differ significantly in terms of their key personal and business values.

Methodology

Cross-sectional survey research was conducted with entrepreneurs from each of the two ethnic communities. The study sought to assess both the general values held by these entrepreneurs and any values affecting the running of their businesses. Accordingly, four key variables were measured:

1. value priorities in the entrepreneur's personal life and business,
2. motives for starting the business,
3. values associated with "good" and "bad" businesses, and
4. perspectives on personal and citizen responsibilities.

Motives for starting the business were included as various researchers have stressed the linkage between values and motives, while motives have also received considerable attention in the entrepreneurship literature (Heider 1958; Higgins 2000; McClelland 1961). Perspectives on personal and citizen responsibilities help in ascertaining the larger purpose of the venture from a value perspective.

Measurement of these variables was accomplished using a structured-format questionnaire consisting mostly of open-ended questions, with response categories created after the fact based on similarity of answers. The approach is consistent with Kilby's (1993) recommended reliance on sensitive interviewing when attempting to measure real values and the respondent's strength of commitment, especially with subjects having varying levels of literacy and familiarity with survey instruments.

To measure value orientations, a hybrid approach was adopted. Existing work tends to have subjects respond to questions relating to established value inventories, usually employing fixed-format response scales. In the current study, subjects were asked a series of open-ended questions regarding the values with which they most identified, and for which their businesses stood. In addition, they were presented with an inventory of 26 values and asked to prioritize the 5 values with which they most closely identify. These values were selected to reflect an equal mix of values associated with African culture (e.g., tradition/history, respect for earth, extended family, community responsibility, respect, ancestors, harmony) and those associated with entrepreneurship, at least from a Western perspective (e.g., achievement, individualism, freedom, hard work, competitiveness, wealth) (Godsell 1991; Hebert and Link 1998; Lipset 2000; Mangaliso 2001; McClelland 1961). In each of these two areas, the values chosen were those receiving the most mentions in the extant research.

The data collection relied on self-reports in a personal interview format. Interviews averaged 45 minutes in length and were conducted in English. Interviewers were conversant in the native tongue of the respondents (typically Xhosa for blacks and Afrikaans for coloreds) and were able to translate when interpretive difficulties arose with any of the questions. The questionnaire was pretested with six entrepreneurs not included in the final samples. Interviews were conducted at the entrepreneur's place of business.

Findings

The study employed two separate convenience samples of black and colored entrepreneurs based in townships within the Cape Town metropolitan area. As no single database exists of small firms categorized by race of the entrepreneur, one had to be constructed. The sampling frames consisted of lists of 145 colored and 95 black entrepreneurs generated through referrals from community agencies and organizations devoted to the development of entrepreneurship among historically disadvantaged groups. To be included in the final sample, respondents had to be entrepreneurs originally from South Africa with their established business in operation for a minimum of two years, and having at least five employees not including the entrepreneur. A total of 37 black and 62 colored entrepreneurs agreed to participate in the study and produced useable responses.

General Descriptors

The average respondent in the study was 41 years of age, married (68%), and had completed high school (75%), with 34% earning a technikon/college diploma or university degree. The business had been in operation for 8 years, had 10 employees, of which 8 were nonfamily employees, with an annual turnover of just under R 2 million (the rand:dollar exchange rate was 7:1 at the time of the research). The typical business was started with R71000, although there was considerable variance in this figure. A diverse mix of industry categories was represented, with services and retail businesses the most prevalent, and no manufacturing firms.

The two samples were fairly similar in terms of these descriptors, with some exceptions. No statistically significant differences were identified for education levels, gender, marital status, number of years in operation, annual turnover, number of nonfamily employees, or start-up funds used. In addition to native language and region of origin, the two groups differed in terms of respondent age, with black entrepreneurs being older ($t = 9.85$, $p = .002$); type of business, with black entrepreneurs more likely to own retail and consumer service ventures (chi sq. = 42.5, $p = .000$); and number of family employees, with colored entrepreneurs employing more ($t = 2.02$, $f = .046$).

Sample of Black Entrepreneurs

Chief motivations among black entrepreneurs for going into business were serving the community, followed by a desire for independence, wanting to achieve or create something, and then personal wealth creation. The emphasis on community may indicate a true value, but may also reflect an appropriate public position for one to advocate in the contemporary political and social environment in South Africa. When asked to indicate the most important items in life, these entrepreneurs indicated family, followed by quality of life, their business, and happiness (see Table 1). Alternatively, when provided with a list of 26 values and asked to select the 3 most important ones, hard work, warm relationships, community responsibility, discipline, and achievement received the most mentions. Respondents were also asked about their single greatest

Table 1
Comparing the Samples in Terms of Key Values

	Number of Mentions: Colored Sample	Number of Mentions: Black Sample
Most important things personally in life (open-ended question)	Family (31)	Family (21)
	Religion/spiritual life (28)	Quality of life (20)
	Happiness (23)	My business (16)
	My business (15)	My health (8)
	Money/wealth (13)	Happiness (6)
	My health (10)	Money/wealth (6)
	Community (9)	
Words with which I personally most identify (list of values provided)	Hard work (38)	Hard work (22)
	Warm relationship (28)	Warm relationship (17)
	Individualism (21)	Community responsibility (17)
	Tolerance/others (18)	Discipline (15)
	Being respected (17)	Achievement (14)
	Humanity (16)	Human rights (11)
	Personal security (15)	Personal security (9)
	Human rights (14)	Humanity (9)
	Achievement (14)	Being respected (9)
	Fun/enjoyment (14)	Excellence (7)
Single greatest resonsibility as a citizen (open-ended question)	Job creation (21)	Job creation (14)
	Community upliftment (12)	Community upliftment (9)
	Relationship building (9)	Education (5)
	Role model (8)	Role model (2)
	Support family (6)	Relationship building (2)
	Education (4)	Support family (2)
	Generosity (12)	Freedom (7)
	Gratitude (12)	Dignity/honor (6)
	Wealth/power (10)	Wealth/power (6)
	Excellence (9)	Ancestors/rituals (4)
	Dignity/honor (9)	Tolerance of others (3)
	Extended family (7)	Respect for earth (2)

responsibility as a citizen. Frequently cited duties included job creation, community upliftment, education and awareness, and serving as a role model.

The most commonly mentioned core values for their businesses were customer friendliness/relations, service/product excellence, honesty, and proper treatment of employees. When asked for a single word describing what their business stands for, leading answers were community development, service, customer satisfaction, and professionalism. In the elapsed time since they started their ventures, respondents noted that customer service and good management had become more important values than they previously had been, while financial gain and desire for success had become less important values. Key traits sought by black entrepreneurs in a new employee were personality/communication skills, honesty, and reliability. A majority of respondents believed in sharing their business profits with others in the community, primarily through charitable donations and help for the needy.

Looking to the future, the best evidence of success within their own businesses five years from now would be growth in revenues, improved facilities, new products, and more employees.

Businesses admired by the respondents were those having good products, satisfied customers, profitability, and happy employees. Consistent with these responses, characteristics of "bad" businesses were poor customer service, lack of profitability, dishonesty, poor product quality, and weak management. An alternative question asked if there were aspects of business with which respondents were uncomfortable, or that conflicted with their values and beliefs. The top answers were dishonesty/deception, demands of competition, and dealing with money issues.

Sample of Colored Entrepreneurs

For colored entrepreneurs, leading motives for going into business included ambition/desire to create something,

independence, service to the community, and building personal wealth. Responding to an open-ended question, the most important things in life for these entrepreneurs in order of importance were family, religion, happiness, their business, and money/wealth. When provided with a list of personal values, hard work, warm relationships, individualism, tolerance (of others), and being well-respected were prioritized. With regard to citizen responsibilities, this sample placed greatest emphasis on job creation, community upliftment, and relationship building.

Core business values mentioned most frequently were service/product excellence, customer friendliness/relations, reliability/hard work, treatment of employees, and honesty. Words that best describe what respondent businesses stood for included excellence, success, service, and community responsibility. Values that have become more important since starting the business were family, customer service, growth, and good management; less important values included money, family, and desire for success. When hiring new employees, attributes of greatest importance were honesty, personality/communication skills, willingness to work hard, and job skills/qualifications. Colored entrepreneurs were less apt to share their business profits with the community. Rather, they believed the business itself was responsible for creating value for the community by creating jobs, producing goods, and so forth. In considering what would be signs or evidence of business success five years hence, the most commonly cited responses were improved products and facilities, enhanced profitability, growth and diversification, and improvement of staff.

The colored sample tended to most admire businesses that offered high quality products/services, those with happy employees, firms with highly satisfied customers, and those demonstrating excellent management skills. Least admired businesses exhibited inferior product/service quality, poor management, inability to meet promises, and tendencies toward unethical/dishonest behavior. Business practices that may be related to success but with which they were uncomfortable included dishonesty/corruption, practices that violated religious precepts, and ruthlessness/backstabbing.

Comparing the Samples

Both sets of entrepreneurs got into business for the same reasons, although the relative emphasis on achievement was greater for colored entrepreneurs, and serving their community was more prevalent among black entrepreneurs. The two samples did not differ significantly in terms of their perceived responsibilities as citizens. When hiring employees the samples differed marginally, with black

Table 2
Examples of Specific Practices that Illustrate Key Values of the Business

1. Selection of staff; someone who can fit with company values.
2. Fixed prices for all clients irrespective of who they are.
3. Producing consistently good quality products.
4. I respect my customers; I have a polite way of dealing with my customers; I always smile.
5. I know my customers' names.
6. Hospitality; I transport an old lady who is a customer to her house; If people have not been in for a while I make inquiries.
7. I treat customers with honesty at all times, no matter what.
8. Success is important to me, and I am very selective in choosing staff so as to ensure business success.
9. I work alongside my workers; I'm not a "big boss"; I spend time with them and talk with them; If they make mistakes I help them learn how to do it right.
10. I get involved with the community, including not just providing good service, but helping to develop youngsters an putting up an internet facility for them.
11. I render extra service for the community, such as chopping up a beast for a funeral.
12. We clean up our premises before we open for customers; We set up the shelves neatly, for good appearance.
13. We do tests such as blood pressure for free, give free advice even if people are not buying, look at a long-term relationship.
14. We help the crèche and old people's home by supplying vegetables for free.
15. Honesty—return money from client's pockets; lead by example.
16. Open door policy to ensure people get fair treatment.
17. The way I talk to my customers.
18. Money back guarantee if people are not satisfied.
19. To service the customer well I have tags that say "thank you."
20. I ensure that, even if money is tight, my staff are paid on time every week.
21. We reward the staff for good service, being on time, or neatness.
22. High professional standards.
23. Appearance is important and my staff and I always look smart and our environments shows this.

respondents placing more emphasis on reliability, and colored respondents placing more emphasis on hard work and skills/qualifications (chi sq.=20.7, p = .004). Black entrepreneurs were more likely to perceive a greater obligation for the business to give back to the community (chi sq. = 12.4, p =.03). With regard to measures of future success, black respondents put more emphasis on revenues while colored respondents placed greater weight on profitability (chi sq.=21.1, p=.003).

The values and priorities of respondents' personal lives demonstrate some interesting patterns, with clear differences between the two samples (see Table 1). In terms of the three most important things in their lives (open-ended response), both samples emphasized similar things, but with different priorities. Family was stressed by both samples more than any other factor. Both samples placed the same relative emphasis on happiness, health, and wealth. However, the colored sample placed significantly more emphasis on religion/spiritual life, while the black sample was more concerned with quality of life (as reflected in security, education, etc.) and they placed a higher priority on the business itself.

In the area of business values, significant differences were not identified between the two samples, with the exception that hard work received greater priority among colored entrepreneurs (chi sq. = 12.5, p = .03). Changes in the saliency of different values since starting their ventures were strikingly similar between the two samples. Also interesting are the ways in which the entrepreneurs attempted to manifest these values in the operations of their businesses. Twenty-three examples of specific business practices that illustrate core business values are summarized in Table 2. In both samples, the greatest emphasis was on interactions with customers and approaches to managing employees.

When asked to select five words (values) with which respondents most identified (from a set of 26 words), again there were interesting parallels and differences. Hard work and warm relationships with people received the most mentions among both samples. The colored sample stressed individualism, tolerance of others, and fun/enjoyment more so than did the black sample. Alternatively, the black sample placed greater weight on community responsibility and discipline. Relatively equal weight was placed on such values as humanity (compassion), human rights, personal security, being well-respected, and achievement. Justice, respect for the earth, democracy, hospitality, and consensus/harmony received little or no mention by either sample. Respondents tended to view their primary responsibilities as citizens in a similar manner. While presented as an open-ended question, both samples stressed job creation, community upliftment, serving as role model for others, educating others, and taking care of one's family.

Further insights were obtained by applying exploratory principle components factor analysis to the values of the two samples of entrepreneurs. Table 3 summarizes the factor structures that emerge for both groups based on their ratings of the importance of 26 values. With both groups, 4 multi-item factors were retained, and these explained 43.3 percent and 63 percent of the variance, respectively, in each of the samples. For black entrepreneurs, the first factor was labeled "social relatedness." It consists of community responsibility, warm relationships with others, and extended family. Both excellence and hard work have high negative loadings on this factor. The second factor, labeled "social awareness" included high loadings for human rights, respect for earth, and concern for democracy. Negatively associated items included being well-respected and fun and enjoyment. It may be that a perceived lack of respect leads these respondents to value human rights highly. The third factor was "economic security" (with being secure and achieving wealth loading highly) and the fourth factor was "achievement" (with achievement and tradition/history loading highly).

Leading factors for the sample of colored entrepreneurs were quite different. The first of these was labeled "collective work ethic," as highly loading factors included hard work and discipline, but with individualism loading negatively. A second factor was termed "sense of well-being." It included values of warm relationships, excellence, and freedom. Ryan and Deci (2001) have argued that relatedness, autonomy, and perceived competence (excellence) are the core dimensions of an integrated positive sense of well-being and optimal human functioning. Other factors included "personal enjoyment" (with fun and enjoyment and dignity loading highly) and "material achievement" (with wealth and competitiveness loading highly).

Table 3
Differences Between Ethnic Groups Based on Factor Analysis of 26 Values

Colored Entrepreneurs	*Black Entrepreneurs*
Factor 1: Collective Work Ethic	Factor 1: Social Relatedness
_ hard work	_ community responsibility
_ discipline	_ extended family
_ individualism (negative)	_ warm relationships
	_ hard work (negative)
	_ excellence (negative)
Factor 2: Positive Sense of Well-being	Factor 2: Collective Needs and Rights
	_ desire for human rights
_ warm relationships	_ respect for earth
_ excellence	_ concern for democracy
_ freedom	_ negative scores for fun, enjoyment, being well-respected

Conclusions and Implications

If we consider the phenomenon of entrepreneurship on a global scale, the dominant trend of the 21st century will be ethnic entrepreneurship. As economies the world over more fully embrace free enterprise and free trade, as technology enables countries to develop local infrastructure more rapidly, and as microfinance and venture capital funding becomes increasingly available, the large majority of new ventures, products, and markets will derive from ethnic ventures. At the same time, we can expect the degree and amount of entrepreneurial activity emitting from any one ethnic group to be influenced by the nature and strength of the values held by its members.

This study was conducted with two diverse subcultures in a society that is relatively modernized. The results suggest that:

1. Entrepreneurs tend to embrace common values regardless of their individual ethnic heritage, but with different underlying patterns.
2. The entrepreneurial path itself gives rise to certain shared values.
3. The larger South African culture has a strong influence on value orientations.

The two samples were quite similar in their responses to many of the values questions. Notable differences in terms of individual values that appear to directly relate to their ethnic backgrounds include the strong emphasis on religion among the colored respondents, and quality of life among black respondents. Yet, results from the factor analysis indicate differences in terms of underlying value patterns, supporting the central research hypothesis.

Leading factors for colored entrepreneurs had to do with a collective work ethic and positive sense of well-being, suggesting the importance both of the group working together to get ahead and of personal fulfillment. Alternatively, the value structure for black entrepreneurs appears to be built first around social relatedness, or a desire for community. While consistent with the African concept of ubuntu, or humaneness (Mangaliso 2001), the fact that excellence and hard work both had high negative loadings suggests the factor may reflect Maslow's social needs rather than being a genuine motivator of entrepreneurial success. The second factor associated with these entrepreneurs consisted of socio-political concerns, such as human rights, respect for earth, and democracy. Yet, high negative loadings indicate that these individuals may not feel respected or express enjoyment. This conclusion is consistent with Godsell's (1991) findings that entrepreneurship is given low status within black communities. Combined with the legacy of apartheid, a lack of respect and less enjoyment may drive blacks to place a higher value on human rights. Regardless, they appear to have less of a positive integrated sense of well-being, at least relative to the colored entrepreneurs.

Godsell (1991) also concluded, contrary to expectations, that black entrepreneurs in South Africa were tenacious individualists. This finding is interesting in light of the tendency in the current study for black respondents to place very little emphasis on individualism as a value. One of the reasons that blacks must be so tenacious is the lack of organic networks within their communities to support their entrepreneurial efforts. The entrepreneur is very much on his or her own. In spite of this, they clearly retain a cultural value of giving back to the community. It may also be that contributions to the community are viewed as a means of elevating their status and gaining respect. Further, the contemporary South African environment finds many new social and community expectations placed on successful black entrepreneurs.

It is also useful to juxtapose values often associated with entrepreneurship against those associated with African cultures. Both samples emphasized hard work and achievement, and their businesses represented one of the most important things in life, suggesting that those who pursue the entrepreneurial path either bring to it or develop certain values not necessarily associated with their ethnic background. The decision to pursue entrepreneurship as a chosen form of work reflects certain values to the extent that a person feels it to be a worthy way of spending their life and is dedicated to that form of work. At the same time, it is interesting to note that neither of the samples placed much emphasis on wealth generation.

Alternatively, such African or South African values as warm relationships, humanity, human rights, and personal security were important to both samples, indicating that the overarching culture does play a significant role. An examination of the examples provided by respondents of the ways in which their values are manifested in the businesses reinforces this conclusion, as many examples were provided of efforts to build friendly, warm, honest and fair relationships with customers, suppliers, and others. This conclusion suggests that a growing global emphasis on entrepreneurship does not necessarily represent an outside influence that undermines or markedly changes cultural groups.

Financiers, suppliers, customers, public officials, and others would be well served to consider their interactions with ethnic entrepreneurs in light of these findings. Understanding the entrepreneur's values is a critical beginning point in building trust-based relationships. The ability to affect positive outcomes when selling to, purchasing from, negotiating and working with, or otherwise trying to influence ethnic entrepreneurs is likely to be enhanced if one recognizes (1) the shared values they hold as entrepreneurs, and (2) their unique values based on their ethnicity. Thus, the strong emphasis both groups place on family, hard work, product quality, and achieving wealth is an important beginning point in formulating sales approaches, communication efforts, negotiation strategies, and educational programs. Perhaps of greater importance is the need to rely on tactics that reinforce, or at least do not conflict with, such ethnically distinct values as social relatedness among blacks, or religion and personal fulfillment among coloreds.

These findings also provide direction in terms of future research priorities. The current study has identified patterns of values as they relate to ethnic subcultures and entrepreneurship. However, additional work is needed to determine the relative importance of cultural values, subcultural values, and values related to other aspects of life (e.g., institutions with which one has been affiliated such as schools, labor unions, civic organizations, prisons) as they relate to entrepreneurial activity. Further work should also address the relationship between personal values, business values, and the manifestation of values in the workplace. In this study, there was no clear relationship between the personal values of the entrepreneurs and the values they ascribed to their businesses, but the ability to uncover such a relationship was limited by the open-ended structure of the questions. In a related vein, additional insights are needed into the relationship between values and particular aspects of entrepreneurship, such as the entrepreneur's resource acquisition strategy, financial structuring of the venture, growth strategy of the firm, and so forth. A shortcoming of the current research is that it did not consider entrepreneurs who failed. To the extent that values play a role in success or failure, it is important to include unsuccessful entrepreneurs in future studies. Moreover, failure itself may well affect the entrepreneur's values, determining not only whether he or she pursues subsequent ventures, but the way in which those ventures are approached.

Finally, any interpretation of the research results should consider the methodological limitations inherent in the current study. Most prominent among these is the process of reporting values to researchers. Values have saliency not only for the individual, but within larger cultural contexts. As such, it is possible that respondents might indicate certain values are more important simply because those values are thought to be politically correct or are more salient in the larger social milieu. In addition, the samples were limited both in terms of size and the selection process. The representativeness of the sample is also constrained by the lack of dependable data regarding the total number of ventures in the region studied that are owned by black and colored entrepreneurs, especially with the large number of informal sector businesses, and because the current government discourages reporting of racial identifiers.

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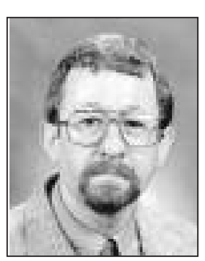

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Using Social Cognitive Career Theory to Predict Self-Employment Goals

Gerry Segal
Dan Borgia
Jerry Schoenfeld

Social Cognitive Career Theory (SCCT; Lent, Brown, and Hackett 1994, 1996) proposes that career interests, goals, and choices are related to self-efficacy beliefs and outcome expectations. It suggests that people's self-efficacy beliefs and outcome expectations with regard to self-employment would predict their goals to become self-employed. This study explores the ability of SCCT to predict goals for self-employment in a sample of 115 undergraduate business students. Results indicated that students with higher entrepreneurial self-efficacy and higher self-employment outcome expectations had higher intentions to become self-employed. These findings imply that educators and policy-makers may boost student entrepreneurial intentions by (1) enhancing students' confidence to succeed in an entrepreneurial career and (2) enhancing students' expectations of strong positive outcomes resulting from an entrepreneurial career.

Being an entrepreneur, one who is self-employed and who starts, organizes, manages, and assumes responsibility for a business, offers a personal challenge that many individuals prefer over being an employee working for someone else. Entrepreneurs accept the personal financial risks that go with owning a business but also benefit directly from the success of the business. As career choices go, becoming an entrepreneur is one of the most risky and unstructured choices an individual can make (Campbell 1992). Being an entrepreneur is often viewed as an aversive career choice where one is faced with everyday life and work situations that are fraught with increased uncertainty, impediments, failures, and frustrations associated with the process of new firm creation. It seems, therefore, unlikely that an individual would make a goal for an entrepreneurial career if he or she did not feel confident to perform the necessary tasks associated with forming and developing his or her own business. What is it about certain people that drives them to take on the risk, uncertainty and independent structure of business ownership?

Stevenson and Jarillo (1990) suggested that research exploring entrepreneurial behavior could be divided into three categories: (1) how entrepreneurs act (i.e., what do they do), (2) what happens when entrepreneurs act (i.e., what are the outcomes of their actions), and (3) why people choose to act as entrepreneurs (i.e., what motivates them). The research presented in this article focuses on the third category, and explores the use of a well-accepted model from the careers literature, Social Cognitive Career Theory (SCCT), to shed light on the motivation to become an entrepreneur.

Although many studies of entrepreneurial motivation have examined personality traits of entrepreneurs, the results of these studies are mixed and inconclusive (Herron and Sapienza 1992; Shaver and Scott 1991; Kreiser, Marino, and Weaver 2002). Recent research (Roy and Elango 2000) has begun to focus on other characteristics of entrepreneurs, such as cognitive make-up as a potential indicator of success. Entrepreneurship research has also attempted to identify the situational and environmental factors that predict entrepreneurial activity, such as job displacement, previous work experience, availability of various resources, and governmental influences. However, these empirical studies of contextual factors have also found low explanatory power and predictive ability (Krueger, Reilly, and Carsrud 2000).

Most of the entrepreneurship motivation models advanced in recent years are process-oriented models, based on either economic or social psychological theory. Several researchers (Campbell 1992; Levesque, Shepherd, and Douglas 2002; Praag and Cramer 2001) have proposed models using economic perspectives to predict self-employment. These economic models suggest that the decision to become self-employed is based on maximizing the net usefulness, utility, or desirability of an entrepreneurial career.

In a theoretical discussion of the psychology of new venture creation, Shaver and Scott (1991) emphasized that new ventures emerge because of deliberate choices made by individuals. They then examined the immediate antecedents of choice: (1) Can I make a difference? (i.e., feasibility) and (2) Do I want to? (i.e., desirability). Research (Krueger and Carsrud 1993; Krueger et al. 2000) has continued on models using perceived feasibility and perceived desirability to predict entrepreneurship. This research found support for models developed by Ajzen (1991, 1985) and Shapero (1982), which used perceived feasibility and desirability to predict entrepreneurial intentions. While these process-oriented models of motivation to become an entrepreneur have some promise, one area of potential beneficial research that is ripe to be applied to the field of entrepreneurship is the careers literature and models of career choice.

SCCT (Lent, Brown, and Hackett 1994) is one of the most accepted and validated models discussed in the careers literature to understand career interests and goals

(Gore and Leuwerke 2000; Smith and Fouad 1999; Swanson and Gore 2000). However, the application of the SCCT model to entrepreneurial career decision-making has not been explored. Yet, use of an established model of career interests and goals such as SCCT may facilitate the ability to predict interest and goals for an entrepreneurship as a career choice.

The entrepreneurship literature has explored a wide variety of theories and models to answer: "What motivates an individual to become an entrepreneur?" To date, SCCT has not been discussed in the entrepreneurship literature. Yet, the careers literature includes a large number of studies examining its theoretical underpinnings and establishing the value of social cognitive theory to career selection (Beltz and Hackett 1981; Krumboltz, Mitchell, and Jones 1976; Lent and Hackett 1987; Smith 2002). Because the decision to become self-employed is essentially a career decision, this important theory deserves the attention of entrepreneurship practitioners and researchers.

Entrepreneurship researchers (Jelinek and Litterer 1994; MacMillan and Kartz 1992) have called for frameworks grounded in well-established theory. Zahra and Dess (2001) emphasized the benefits of drawing from many social science disciplines and the need to improve entrepreneurship theory building.

The purpose of the current study is to: (1) bring the well-established SCCT (Lent, Brown, and Hackett 1994, 1996) model to a forum of entrepreneurship researchers and practitioners, (2) explain why it should yield strong prediction power to explain entrepreneurial interests and goals, and (3) perform an exploratory test of the model, using a sample of business students.

The SCCT Model of Career Choice

The career development process is affected by a variety of personal, environmental, and situational factors that interrelate and change over the course of time. A number of theoretical works exist on the career development and selection process; however, the empirical evidence remains sketchy. Hackett and Lent (1992) suggested that the field would profit from theory-building efforts that "(a) bring together conceptually related constructs (e.g., self-concept, self-efficacy), (b) more fully explain outcomes that are common to a number of career theories (e.g., satisfaction, stability), and (c) account for the relations among seemingly diverse constructs (e.g., self-efficacy, interests, abilities, needs)." They presented a theoretical framework that attempted to explain central, dynamic processes and mechanisms through which career and academic interests develop, career-relevant choices are forged and enacted, and performance outcomes are achieved. The model is anchored in social cognitive theory and highlights the importance of self-beliefs and self-thought in fostering an individual's motivation and subsequently guiding their behavior.

Figure 1 illustrates the specific interrelatedness of the three main variables of the SCCT model, which affects the choice of career. These core variables are *self-efficacy*, which affects an individual's expectations for outcomes as well as their intentions toward performance; *outcome expectations,* which affects their future performance or goals; and, ultimately, their *goals* toward self-employment. In accordance with SCCT, the concept of goals is broadly defined in this article to include plans, aspirations, or intentions.

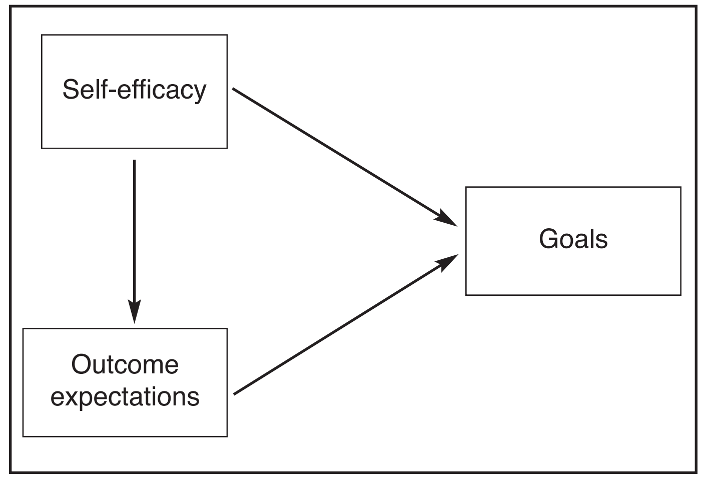

Figure 1. SCCT model

Career selection literature looks at different motivating factors and influences involved in the basic career selection and development process. Much of the research on social cognitive career selection is based on the earlier works of social cognitive theory (Bandura 1986). Bandura advocated a model of triadic reciprocality, which illustrates the interacting influences between people and their behavior and environments. Bandura posited that a person's behavior results from the interaction of that person and their environment, [B = *f* (PÖ E)]. Lent et al. (1994) extrapolated a segment of social cognitive theory and proposed a framework that emphasized three social cognitive mechanisms that seem particularly relevant to career development: (1) self-efficacy beliefs, (2) outcome expectations, and (3) goal. This career development theory may be particularly relevant for entrepreneurs. Krueger et al. (2000) compared models of entrepreneurial intentions to the ultimate choice of becoming an entrepreneur. They suggested that intentions have proven to be the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags. Thus, social cognitive theory as utilized in the SCCT model may be ideally suited to the study of entrepreneurs and new businesses.

This article presents a more detailed examination of the roles that self-efficacy, outcome expectations, and goals play in the role of self-selection as an entrepreneur. The core SCCT model from the research of Lent, Brown, and Hackett (1994), which has been the basis for a growing and now established body of research in the career field (Fouad and Smith 1997; Hackett and Lent 1992; Lapan, Shaughnessy, and Boggs 1996; Lent et al. 1994; Lent et al. 1996; Lopez, et al. 1997; Smith 2002; Smith and Fouad 1999), is presented to better identify and explain the significant factors that encourage a person to choose entrepreneurship over a traditional employee role.

Self-Efficacy

Self-efficacy theory involves individuals interacting with their environment and having a desire to acquire the cognitive, social, and behavioral skills necessary to develop strategies that can aid in goal accomplishment. As defined by Bandura (1986), perceived self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances."

In the social cognitive view, self-efficacy is not a unitary, fixed, or decontextualized trait but rather involves a dynamic set of self-beliefs that are specific to particular performance domains and that interact complexly with other persons, behavior, and environmental factors (Lent and Brown 1996). Self-efficacy is concerned with an individual's thoughts of whether he or she is capable of succeeding at a particular endeavor. Unrelated to measurable, objective indices of ability or skills, self-efficacy relates to a series of self-beliefs about the capabilities one holds for a particular task.

Self-efficacy beliefs are viewed as the most vital and all-encompassing explanation of personal agency (Bandura 1989). The probability of initiating an activity may be partially explained by the extent to which an individual believes he or she can effectively perform the behavior (Bandura 1977, 1986). Hackett and Betz (1981) wrote the seminal work in the career development literature focusing on the role of self-efficacy beliefs on the career selection process. Since that time, their work has been well supported by research. Meta-analysis (Lent et al. 1994) found that self-efficacy beliefs strongly (R^2 = 0.52) predicted career interests.

Self-efficacy not only contributes to interests and goals directly, but also through its effect on outcome expectations. This effect may be explained by the fact that people tend to expect more desirable outcomes in activities in which they see themselves to be efficacious (Bandura 1986).

Outcomes Expectations

Outcome beliefs form as a result of an individual's expectations about the consequences of his or her behavior. Whereas self-efficacy is concerned with, "Will I be able to do this?" outcomes are concerned with, "If I do this, then what will be the outcome?" Outcome expectations were originally defined by Vroom (1964) in his efforts at introducing expectancy theory to organizational settings. According to Vroom, an individual will choose among alternative behaviors by considering which behavior will lead to the most desirable outcome. Outcome expectations play an important role in motivating individuals toward goals. Outcome expectations include several types of beliefs about response outcomes, such as beliefs about extrinsic reinforcement (e.g., receiving tangible rewards for successful performance), self-directed consequences (e.g., pride in oneself for mastering a challenging task), and outcomes derived from the process of performing a given activity (e.g., absorption in the task itself) (Lent et al. 1994). Bandura (1986) suggested several different classes of outcome expectations, such as the anticipation of physical (e.g., financial gains), social (e.g., status), and self-evaluative (e.g., pride) outcomes, that may affect career behavior. These outcomes are also influenced by the effects of self-efficacy to have an impact on the individual as to whether they are able to do it and if they value the perceived outcomes resulting from their actions.

SCCT suggests that outcome expectations are important determinants of career interests and goals (Gore and Leuwerke 2000). People will have stronger interests in activities and careers and will develop goals to enter careers in which they anticipate desirable outcomes. The decision between a career of self-employment or working for others may be viewed as a cognitive process in which individuals compare the relative desirability of each career option. As noted by Bandura (1989), this cognitive process also encapsulates important affective reflections when making an employment decision. If an individual believes self-employment is more likely than working for others to lead to valued outcomes, then he or she is more likely to be drawn to self-employment.

Goals

Bagozzi, Baumgartner, and Yi (1989) found that goals are the single best predictor of planned behavior. While environmental factors and personal experiences help to shape one's behavior, the setting of specific goals helps the individual to organize and direct their behavior in a sustained manner and increase the likelihood that desired intentions will be achieved (Lent et al. 1994). Goals are an important element of many career choice and decision-making theories although many terms have been utilized including career plans, career decisions, and career aspirations. Lent, Brown, and Hackett (1994) point out that the differences among the various terms for goals are generally minor and relate principally to their degree of specificity and proximity to actual choice implementation. For of purposes this article, goals will be defined broadly and follow Bandura's (1986) definition as being the determination to engage in a particular activity or to effect a particular future outcome.

Being an entrepreneur requires a great deal of planned behavior, from formulating the idea, securing financing, and setting up and running the business. Prior research using situational and personality measures have failed to significantly predict entrepreneurial activity. Krueger et al.

(2000) compared the predictive ability of two entrepreneurial intention models to predict entrepreneurial activity. They report that entrepreneurship is planned; therefore, it is intentional behavior. Planned behavior may be best predicted by observing goals toward that behavior, not by observing and measuring attitudes, beliefs, personality characteristics, or demographic variables.

Based on the preceding discussion, the following hypotheses are drawn:

Hypothesis 1:There is a positive relationship between an individual's entrepreneurial *self-efficacy* and his or her *outcome expectations* for entrepreneurial activity.

Hypothesis 2: There is a positive relationship between an individual's entrepreneurial *self-efficacy* and his or her *goals* to become entrepreneurs.

Hypothesis 3: There is a positive relationship between an individual's *outcome expectations* for entrepreneurial activity and his or her *goals* to become entrepreneurs.

Methodology

This section examines the sample data and variables employed in this study.

Sample Data

The study surveyed 115 junior and senior undergraduate business students at an AACSB (American Assembly of Collegiate Schools of Business) accredited southeastern university in January 2001. Surveys were completed anonymously during regular class time, with a response rate of 100 percent.

Dependent Variables

(A detailed listing of the questions and potential responses used to develop the variables for this study can be found in Figure 2). As previously discussed, the primary dependent variable in the SCCT model is entrepreneurial goals or intentions (used here as interchangeable terms). The survey instrument defined entrepreneurship as "being self-employed in your own business" and asked, "How likely are you to become an entrepreneur?" to measure the dependent variable "entrepreneurial goals."

A second variable in the model that functions both as a dependent and an independent variable is the "outcome expectations" index. A review of the entrepreneurship literature disclosed several desired outcomes explaining the decision to become self-employed. Five outcomes frequently mentioned in the literature included (1) monetary rewards, (2) financial security, (3) independence, (4) sense of achievement, and (5) escape from corporate bureaucracy. The researchers multiplied the importance of each outcome by the self-reported confidence that the respondent could achieve the outcome through self-employment. The product of the responses to these two questions for each outcome resulted in five outcome expectations variables: money, financial security, independence, achievement, and bureaucracy. The researchers' initial intention was to sum the responses to these five variables into an outcomes expectations index. They used Cronbach Alpha to determine internal consistency among the outcome variables. Crano and Brewer (1986) suggest that the degree of internal consistency is considered acceptable if the Alpha coefficient is 0.75 or better. The analysis of internal consistency (see Table 1) indicated that the bureaucracy outcome variable was not internally consistent with the other outcome variables. As a result, the bureaucracy outcome variable was not included in the computation of the outcome expectations index. Removing this item increased Alpha to an acceptable value of .7755.

Table 1
Impact on Reliability (Alpha) of Removing Outcome Measures for Inclusion in Constructing the Outcome Expectations Index

Importance of Item	*Scale Mean if Item Deleted*	*Scale Variance if Item Deleted*	*Corrected Item-Total Correlation*	*Squared Multiple Correlation*	*Alpha if Item Deleted*
Money	63.2174	230.434	.4699	.3907	.6699
Security	61.6696	200.644	.6522	.4987	.5937
Independence	59.4435	205.582	.6105	.3983	.6116
Achievement	58.5826	223.298	.4756	.2826	.6669
Bureaucracy	63.9391	243.619	.2280	.1130	.7755

Independent Variables

The SCCT model includes two independent variables. The first independent variable is entrepreneurial self-efficacy, which was measured by one question designed to assess an individual's self-confidence in his or her ability to perform the tasks and activities necessary to become an entrepreneur. The second independent variable was the outcome expectations index, which as mentioned above, also functions as a dependent variable.

Research Design. After identifying and computing variables necessary for evaluating the efficacy of the SCCT model, the researchers tested the model, as previously described in Figure 1.

They used regression analysis to assess the ability of the SCCT model to explain self-employment goals, the

Goals:
"How likely are you to become an entrepreneur?"

1	2	3	4	5
O—20%	2l—40%	41-60%	61-80%	81-100%

Entrepreneuria/ Self-Efficacy:
"How confident are you that you have all the necessary knowledge, skills, and abilities to perform the tasks and activities necessary to become an entrepreneur?"

1	2	3	4	5
Not at All Confident	Very Little Confident	Somewhat Confident	Very Confident	Completely Confident

Global Outcomes Expectations: Sum the products of the following two questions in each of the four areas.

1. Earning Lots of Money
"How important is it for you to make a lot of money?"

1	2	3	4	5
Not at All Important	Very Little Importance	Somewhat Important	Important	Extremely Important

"What do you think is the probability of making money by being self-employed?"

1	2	3	4	5
0-20%	21-40%	41-60%	61-80%	81-100%

2. Financial Security
"How important is it for you to have financial security?"

1	2	3	4	5
Not at All Important	Very Little Importance	Somewhat Important	Important	Extremely Important

"What do you think is the probability of having financial security by being self-employed?"

1	2	3	4	5
O—20%	21-40%	41-60%	61-80%	81-100%

3. Independence
"How important is it for you to be independent?"

1	2	3	4	5
Not at All Important	Very Little Importance	Somewhat Important	Important	Extremely Important

"What do you think is the probability of being independent if you are self-employed?"

1	2	3	4	5
0-20%	21-40%	41-60%	61-80%	81-100%

4. Need for Achievement
"How important is your need for achievement?"

1	2	3	4	5
Not at All Important	Very Little Importance	Somewhat Important	Important	Extremely Important

"What do you think is the probability of satisfying your need for achievement if you are self-employed?"

1	2	3	4	5
0-20%	21-40%	41-60%	61-80%	81-100%

Figure 2. Survey instrument measures

dependent variable. The model predicts that outcome expectations are related to goals. Furthermore, the model predicts that self-efficacy affects goals both directly and also indirectly through their effect on outcome expectations.

Model Results

The SCCT model results are presented in Figure 3 and Table 2. Figure 3 shows significant and complete support for the SCCT model. The Adjusted R^2 for the regression was .509 ($p < .001$). A discussion of the findings of each of the three model hypotheses follows.

Hypothesis 1: There is a positive relationship between an individual's entrepreneurial *self-efficacy* and his or her *outcome expectations* for entrepreneurial activity.

It is apparent from Table 2 that the dependent variable outcome expectations was significantly positively correlated with the independent variable self-efficacy with a significant (.001) Pearson correlation coefficient of 0.392. Higher entrepreneurial self-efficacy was associated with higher expected outcomes resulting from entrepreneurship. In addition, the model's link between self-efficacy and outcome expectations possessed significant explanatory power, with a t-statistic of 4.533 ($p < .001$), demonstrating that higher self-efficacy led to higher outcome expectations.

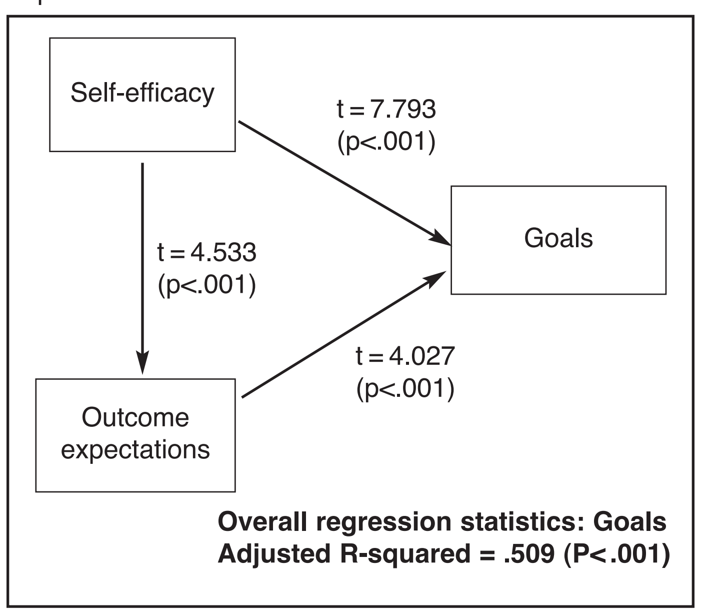

Figure 3. Results for the SCCT model

Hypothesis 2: There is a positive relationship between an individual's entrepreneurial *self-efficacy* and his or her *goals* to become an entrepreneur.

An individual's goals to become an entrepreneur were significantly positively correlated with the independent

Table 2
Model Results
Pearson Correlation Coefficients

	Self-efficacy	*Outcome Expectations*
Goals	.669[a]	.506[a]
Self-efficacy		.392[a]

a. $p < 0.001$.

variable self-efficacy. Higher entrepreneurial self-efficacy was associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.669 ($p < .001$). Higher entrepreneurial self-efficacy was associated with a higher likelihood that an individual would choose to become an entrepreneur. In addition, the model's link between self-efficacy and goals possessed significant explanatory power, with a t-statistic of 7.793 ($p < .001$), demonstrating that higher self-efficacy led to higher aspirations toward entrepreneurial activity.

Hypothesis 3: There is a positive relationship between an individual's *outcome expectations* for entrepreneurial activity and his or her *goals* to become an entrepreneur.

An individual's goals to become an entrepreneur were significantly positively correlated with the independent variable outcome expectations. Higher expected outcomes from engaging in entrepreneurship was associated with a higher likelihood to become an entrepreneur with a significant Pearson correlation coefficient of 0.506 ($p < .001$). In addition, the model's link between outcome expectations and goals possessed significant explanatory power, with a t-statistic of 4.027 ($p < .001$), demonstrating that higher outcomes expectations led to higher aspirations toward entrepreneurial activity.

Discussion

The four positive outcomes pulling people toward entrepreneurship formed an outcome expectations construct: (1) monetary rewards, (2) financial security, (3) independence, and (4) sense of achievement. On the other hand, the negative outcome, escape from corporate bureaucracy, did not correlate with the others. Perhaps this is an indication that people become entrepreneurs because they are attracted by the positive outcomes of entrepreneurship, rather than because they are repelled by the negative outcomes of working for others. Another possibility is that these students have not yet had enough direct experience dealing with corporate bureaucracy to perceive that it is something they wish to avoid.

As hypothesized, respondents in this study formed entrepreneurial goals if they considered themselves to be efficacious and they anticipated positive outcomes from entrepreneurship. As posited, outcome expectations were partly explained by self-efficacy. As Bandura (1986) suggested, respondents expected to attain desired outcomes in activities in which they saw themselves to be efficacious.

The R^2 for this model was .509; such strong explanatory power is rare in the literature explaining entrepreneurial behavior. Krueger et al. (2000) found R2s of .350 for the Ajzen Theory of Planned Behavior and R2 of .408 for the Shapiro–Krueger model. In comparison, trait or attitude typically measure 10 percent of variance in behavior (Ajzen 1987).

Limitations

The sample consisted entirely of undergraduate business students. However, other research (Audet 2000; Krueger et al. 2000) has also relied on student surveys to measure entrepreneurial intentions. The primary goal of the current research was to better understand these students' decisions to become self-employed or work for others. This study was not a simulation using students to predict the behavior of managers or other nonstudent populations. Rather, it was a study of people actually beginning to face career decisions. However, there are students whose intentions are not durable and clear. Also, the findings may not be generalizable to nonstudent populations.

Although cross-sectional research designs are frequently used and considered acceptable in this type of research (Ajzen 1987), the cross-sectional rather than longitudinal design of the study raises the usual caveats regarding lack of causal evidence.

Finally, the use of single-item measures of intentions and self-efficacy raises issues of measurement accuracy. Future research will use multiple-item measures of key constructs to increase validity.

Implications

This research addressed only a portion of the SCCT model. SCCT goes on to predict that intentions/goals will lead to career-related behaviors, such as activity selections and performance attainments.

According to Timmons (1999), America has created more than 34 million new jobs since 1980, while the Fortune 500 lost more than 5 million jobs. Timmons further reported that, since 1980, entrepreneurs have created over 95 percent of the wealth that exists in America today. The success of entrepreneurial activities has resulted in many large firms placing greater emphasis on establishing structures and systems that foster entrepreneurial orientation among managers as a response to declining competitiveness (Lewis, Goodman, and Fandt 2001; Vale and Addison 2002). For these reasons, understanding why people make goals to become entrepreneurs is becoming increasingly important for educators and policy-makers.

Educators, policy-makers, and others wishing to enhance entrepreneurial activity should focus on enhancement of entrepreneurial self-efficacy and outcome expectations. According to Bandura (1986), self-efficacy in an activity such as entrepreneurship develops through four processes: (1) enactive mastery or repeated performance accomplishments, (2) vicarious experience or modeling, (3) verbal persuasion, and (4) autonomic or physiological arousal. Educators may also enhance student's entrepreneurship outcome expectations. A common misconception is that the vast majority of small businesses fail within their first few years. This has a chilling effect on perceptions of outcome expectations. Yet, a large-scale study of the eight-year destiny of small firms (Kirchhoff 1994) found that only 18 percent of all new venture initiations resulted in business failures with losses to creditors. In contrast, 28 percent survived under their original ownership and another 26 percent continued under ownership changes. To stimulate entrepreneurship, perhaps educators should remind students of the high earnings potential an entrepreneurial career makes possible. The best-selling book *The Millionaire Next Door* (Stanley 1999) reported that two-thirds of America's 3.5 million millionaires were self-employed.

Many educational practices may be modified to increase entrepreneurial self-efficacy, outcome expectations, and goals. Further research is planned to recommend specific pedagogical methods and interventions, based on SCCT, that entrepreneurship educators may use to stimulate entrepreneurial goals.

One topic of interest to researchers has been the participation of women (Gundry, Ben-Yoseph, and Posig 2002) and minorities (Masurel, Nijkmamp, and Vindigni 2002) in entrepreneurial activities. This research implies that levels of entrepreneurial intentions of such groups are related to their levels of perceived entrepreneurial self-efficacy and outcome expectations. Enhancing their perceptions of entrepreneurial self-efficacy and outcome expectations may strengthen the entrepreneurial intentions of women and minorities.

If an individual does not wish to become an entrepreneur, it is likely that he or she (1) does not feel efficacious or (2) does not see the outcomes resulting from entrepreneurship as desirable or obtainable. If an individual has low self-efficacy but views entrepreneurship as desirable, he or she might apply some of Bandura's interventions listed above to enhance his or her self-efficacy. Enactive mastery, one of Bandura's four interventions, may be obtained through successful accomplishment of small-scale entrepreneurial activities involving low levels of risk and challenge. If an individual decides not to become an entrepreneur due to low outcome expectations, then it would not be appropriate for him or her to pursue an entrepreneurial career. Even in this instance, it would be wise for that person to determine the accuracy of his or her perceptions. For example, perhaps the failure rate for the proposed new business is not as high as he or she imagine.

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Encouraging Technology-Based Ventures: Entrepreneurship Education and Engineering Graduates

Teresa V. Menzies
Joseph C. Paradi

This article examines entrepreneurship courses offered by engineering faculties in Canada. The venturing rate of engineering students, whether the venturing rate increases if students have taken a course in entrepreneurship, and the type of ventures created are also explored. A recent census and an empirical study of two groups of engineering graduates from a Canadian university were utilized. Findings have implications for educators and administrators and for policy-makers interested in encouraging economic growth.

Graduates from university faculties of engineering are perhaps the most promising cohort from which we would expect high-technology start-ups. Apart from their exceptional academic skills, these graduates have an in-depth knowledge of technology in a specific area and have worked on practical projects throughout their degree studies. They may also, on graduation, work for a technology-related company and thus be accumulating the skills, knowledge, and personal readiness (e.g., financial, networking) for launching their own business. In addition, some of these engineering graduates may have taken courses in entrepreneurship during their engineering degree studies. Entrepreneurship education has been touted as valuable in encouraging venturing and with increasing the success of ventures (Gillin and Powe 1994; Gorman and Hanlon 1997; Hood and Young 1993; McMullan and Vesper 1987; Timmons 1999; Wyckham and Wedley 1990; Young 1997). Specifically, in relation to engineers, Blais (1997) cites multiple advantages for providing engineering students with courses in entrepreneurship. These include nurturing a sociological perspective within engineering students including teamwork and joint initiatives, creativity, innovation, and practical applications as well as teaching them the specifics of new venture creation. Entrepreneurship education is also valuable for graduates who pursue a position within a larger corporation (Hood and Young 1993).

Because technology-based start-ups and ventures have considerable payoff at the personal, regional, and national level, it is appropriate to study how they are nurtured. This article looks at what faculties of engineering are doing to encourage students to pursue a career as an entrepreneur. It also explores the venturing rate and type of ventures started by graduates of one faculty of engineering. The research questions posed in this article are:

1. Do faculties of engineering provide entrepreneurship education? What is the breadth and depth of these offerings?
2. Do engineering graduates venture at a rate above the population in general?
3. Is there a difference in venturing rates according to whether graduates have taken an entrepreneurship course during their undergraduate degree?
4. Do engineering graduates start technology-related ventures?

Previous Literature

Surveys of the incidence and type of entrepreneurship courses have been conducted (Blais 1997; Duke 1996; Gartner and Vesper 1994; McMullan and Vesper 1987; Menzies and Gasse 1999; Vesper 1985, 1993; Vesper and Gartner 1997, 1999; Vesper and McMullan, 1988). Vesper and Gartner are the most well known for their surveys of entrepreneurship education worldwide. As would be expected, their surveys show a tremendous growth over the last 20 years in entrepreneurship education at universities. Looking at Canada in particular, a Canadian Academy of Engineering 1996 survey showed 33 (79%) engineering schools in Canada that either offered, or were intending to offer, undergraduate courses on entrepreneurship and closely related subjects (Blais 1997). In their census of entrepreneurship education offered by universities in Canada, Menzies and Gasse (1999) found that 52 (98%) universities offer entrepreneurship education, mostly within their faculties of business, and that undergraduate entrepreneurship courses were offered in only 16 (48%) faculties of engineering (see Table 1). In some universities, engineering students can take entrepreneurship courses offered by the faculty of business, however, unless there is a formalized program, this may not be easy for students to schedule into their course load. Very few entrepreneurship courses are offered to engineering students at the graduate level.

Range of Entrepreneurship Courses

Table 2 shows the types of courses offered in the engineering schools. The norm is to offer one or two courses. These courses are most commonly an introduction to the field of entrepreneurship, with some orientation toward technology start-ups. The second most common type of course deals with business planning and start-up activities. Additional courses are offered on management of a

Table 1

Number of Credit Courses offered in Entrepreneurship by the Engineering Faculty

University (1998/99 Academic year)	*Undergraduate Courses*	*Graduate Courses*
University of Alberta	1	
University of Calgary[a] (degree minor)	5	
Carleton University		1
Concordia University	1	
Université Laval	4	
McGill University (degree minor)	6	
University of New Brunswick	6	3
Université du Québec À Chicoutimi	2	
Université du Québec À Hull	2	
Université du Québec en Abitibi	2	
Queen's University	1	
University of Regina	1	
University of Sherbrooke	2	
Simon Fraser University	2	
University of Toronto	4	
University of Waterloo	1	1
University of Western Ontario	1	

a. Collaborative program with the faculty of business.

start-up or relatively new business and managing an established business. Courses about innovation, creativity, and opportunity identification are the least common. Only a handful of universities (Calgary, Laval, McGill, New Brunswick, and Toronto) offer breadth and depth of entrepreneurship courses. Engineering students at these universities are served well by the range of entrepreneurship courses available and the degree minor that they can obtain in entrepreneurship (Calgary and McGill). However, little is known about the outcomes (e.g., venture starts by graduates) in relation to these courses.

Propensity to Venture

Surveys of entrepreneurship provide information on the availability of entrepreneurship education. However, there is a distinct lack of research into the propensity of university graduates to venture. McMullan and Gillin (1998) found that at Swinburne University in Australia, 87 percent of graduates from the entrepreneurship program started their own business or were intrapreneurs. In this article, intrapreneuring is not included within the definition of venturing. The authors could find no study in the literature that looked at entrepreneurship education and engineering graduates' rate of venturing. However, a few studies looked at graduate propensity to venture and found rates ranging from 5 to 47 percent.

In the United States, Wheeler (1993) found that 47 percent of science graduates ventured, as compared to only 35 percent of business majors. Much lower rates were found in Ireland where only 5 percent of university graduates owned a business within 5 years, and 15 percent by 10 years after graduation (Fleming 1996). Varying rates were reported for those graduates with degrees in entrepreneurship. Kolvereid and Moen (1997) found that entrepreneurship graduates were more likely to venture than graduates with other degrees. Upton, Sexton, and Moore (1995) found that several years after graduation, 40 percent of graduates had started their own firms, 30 percent worked in a family business, and 30 percent worked for a corporation. Charney and Lidecap (2000) found that just over a quarter of entrepreneurship graduates (27.2%) owned a business, compared with 9 percent for graduates from other areas of business. These studies highlight the problem of estimating the number of graduates who start their own business.

Table 2

Types of Courses Offered

University	Introduction to Entrepreneurship[a]	Innovation Management[b]	Small Business Management/ Human Resources Management[c]	New Venture Creation/ Enterprise Development[d]	Entrepreneurship and Technology[e]	Management[f]
Alberta						X
Calgary	X	X	X	X^{2g}		
Carleton						X
Concordia						X
Laval	X		X	X		X
McGill	X		X		X^4	
New Brunswick					X^4	X^2
UQAC				X^2		
UQAH				X^2		
UQAT	X	X				
Queen's	X					
Regina	X					
Sherbrooke	X			X	X	
Simon Fraser		X	X			
Toronto		X	X^2	X		
Waterloo	X					
Western			X			

a. Introduction (sometimes technically oriented) to the field.
b. Innovation and opportunity identification.
c. Managing a business after start up.
d. Business planning and start-up readiness.
e. Incorporating technology into the business.
f. Managing an established business.
g. Superscript number denotes number of courses. No superscript after X denotes one course.

National Entrepreneurial Activity Rates

Reynolds, Hay, Bygrave, Camp, and Autio (2000) found that entrepreneurial activity varies considerably between countries. They report that 12.3 percent of 18- to 64-year-olds in Brazil, 12.7 percent of the U.S. population, 7.9 percent of Canadians, 4.7 percent of Germans, 1.3 percent of Japanese, and 1.2 percent of Irish adults were in the process of starting a new business. They believe that national differences are based on opportunity structure in the society, motivation and skill to capitalize on the opportunity, infrastructure that nurtures new ventures, demography of the population including age and gender, education level of the population, and the culture within the country and perceptions toward business ownership. To make comparisons between the venturing rate of engineering graduates and the general population, census data are used which show that 16.2 percent of the Canadian labor force own their own business (Lin, Yates, and Picot 1999). The next sections examine the remaining three research questions regarding whether engineering graduates venture at a rate above the population, whether there is a difference according to receiving entrepreneurship courses during their degree program, and whether engineering graduates start technology-related ventures.

Methodology

In this research, a 15-year cohort of engineering graduates from a major university in Canada was surveyed. Two groups were utilized. The first group had taken one course in entrepreneurship during their undergraduate studies (EG). The response rate was 99 percent for all students who could be contacted (46 percent). The second group included a stratified random sample control group of engineering graduates from the same university, matched according to year of graduation, engineering program, and gender (CG). The response rate for this group was 12.5 percent. (This research is part of a longitudinal study of students who have taken either one or a block of three courses in entrepreneurship. This article reports on only those who took one course.)

Results

A mail questionnaire and questions specific to this article were used to find out the propensity to venture and business characteristics.[1] Analysis required to answer the research questions included frequencies, Chi square, and t-tests.

Demographics and Venturing Rates

The two groups of engineering graduates were well matched according to age (in their 30s: EG 67%, CG 70%; in their 20s: EG 25%, CG 23%), gender (male: EG 88%, CG 86%), and program (chemical: EG 42%, CG 46%; industrial: EG 12%, CG 14%). About a third (34%) of EG respondents were current businessowners, compared with a fifth (20%) of the CG (see Table 3). There is a significant difference between these groups (χ^2 (1, N = 286) = 7.503, $p < .05$). When examining business ownership over the long term, nearly half of the EG group (48%) was found to have been a businessowner at some time since graduation, which is significantly different from the control group in which only 26 percent had ever owned a business (χ^2 (1, N = 285) = 14.377, $p < .05$). There was also a significant difference between the groups according to serial entrepreneurship; that is, owning more than one business concurrently or sequentially (χ^2(1, N = 287) = 3.973, $p < .05$). The EG graduates were more likely to own more than one business and to have started several business in sequence.

Table 3

Business Ownership Characteristics and Entrepreneurial Expectations

Characteristics	*EG (n=177)* *n*	*%*	*CG (n=110)* *n*	*%*
Current businessowner	60	34.1	21	19.1
Owner at some time	85	48.0	28	25.7
Serial entrepreneur	29	16.4	9	8.2
Business ownership prior BASc[a]	13	22.8	3	18.8
= < 2 years after graduation	18	31.6	3	18.8
3–4 years	8	14.0	3	18.8
5–7 years	11	19.3	2	12.5
8–10 years	4	7.0	3	18.8
> 10 years	3	5.3	2	12.5

a. Percentages calculated across current businessowners.

Time from Graduation to Business Start

An important concept about venturing and university graduates relates to the number of years between graduation and start-up. Results of this study suggest that graduates who have entrepreneurship education tend to venture sooner after graduation. As noted in Table 3, almost a third (32%) of the EG graduates started a business within two years of their BASc graduation, compared with only 19 percent of CG graduates. Prior to graduation, about a fifth of both groups were already businessowners (ES 23%, CG 19%). About a third of both groups (EG 33.7%, CG

31.3%) started their ventures three to seven years from graduation. Overall, the difference in the time to venture appears to be mainly within the first two years from graduation.

Business Characteristics

A third of both groups (EG and CG) had consulting businesses, mostly related to engineering, and about a fifth owned information technology businesses (see Figure 1). Businesses also included manufacturing, services, real estate, financial services, construction, restaurant, and education services. There were no statistically significant differences between the two groups for type of business or any business characteristics. About 80 percent of both groups started their businesses from scratch, with very few purchasing or joining an existing or family business. More than half of the owners in both groups worked full time in their ventures (EG 68%, CG 53%). The size of the businesses, when measured by number of employees and sales revenue, indicated a wide range (see Table 4). There were many small businesses, with almost half the ventures for both groups having four or fewer employees. Of the EG group, 32 percent of businesses had sales less than $100,000 (CG 38%), but more than a third in each group had sales between $500,000 to in excess of $10 million. The majority of businesses were profitable.

Discussion

Based on the results presented above, this section addresses the questions posed earlier in this article.

Do faculties of engineering provide entrepreneurship education and what is the breadth and depth of these offerings?

From an examination of the literature, which contains a recent census of education programs in Canada, the researchers found that 16 (48%) faculties of engineering offer mostly one or two, but occasionally more, undergraduate courses in entrepreneurship. These courses are mostly an introduction to entrepreneurship, business planning, start-up readiness courses, or managing an active business. However, the majority of universities offer only one or two courses and do not provide extensive range and depth in entrepreneurship courses. From these findings, the researchers concluded that there is no widespread commitment on the part of faculties of engineering in Canadian universities to offer engineering students formal skills and knowledge for starting their own business.

Based on these findings, it would appear that entrepreneurship education should be an integral part of engineering education. The authors suggest there be a shift from electives to required courses in entrepreneurship. There are models of degree minors in entrepreneurship as part of an engineering degree (e.g., University of Calgary); however, these are the exception not the norm. Tradition dictates much of the coursework in degree programs. Arguments against introducing required entrepreneurship courses may propose that additional course material will dilute the technical material that must be taught or overload students with additional course requirements. Scheduling problems may be used as an excuse or perhaps the lack of available faculty to teach entrepreneurship courses. Faculties of engineering that have one or more entrepreneurship course(s) available for students always have a "senior champion" (Menzies and Gasse 1999) among the faculty. This champion is vital for the initiation and continuance of entrepreneurship programming. However, it is hoped that the findings of this study and future research, regarding the greater venturing rate of students who have taken a course in entrepreneurship, may be influential in creating a culture of change within the faculties of engineering, regarding offering mandatory entrepreneurship courses.

Table 4

Characteristics of Current Businesses Owned by Graduates

Business Characteristics	*EG (n=60)* *n*	*%*	*CG (n=21)* *n*	*%*
Origin: Started from scratch	45	76.6	17	85.0
Purchase	1	1.7	2	10.0
Join a family business	5	8.6	0	0.0
Join an existing firm	5	8.6	1	5.0
Other	2	3.4	0	0.0
Type: Consulting	20	35.1	7	36.8
Services	5	8.8	4	21.1
Real estate	2	3.5	2	10.5
Financial Services	3	5.3	0	0.0
Construction	2	3.5	0	0.0
Restaurant business	1	1.8	2	10.5
Manufacturing	4	7.0	0	0.0
Education services	1	1.8	0	0.0
Information technology	11	19.3	3	15.8
Retail	0	0.0	1	5.3
Other	6	10.5	0	0.0
Commitment: Full time	39	68.4	10	52.6
Part time	18	31.6	9	47.4
Profitability: Profitable	41	74.5	17	88.9
Breakeven	8	14.5	2	11.1
Not profitable	6	11.0	0	0.0
No. Employees: 1–2	21	37.5	8	42.1
3–4	9	16.1	1	5.3
5–6	5	8.9	1	5.3
7–8	5	8.9	1	5.3
9–19	6	10.7	6	31.6
20–30	2	3.6	1	5.3
31–50	1	1.8	0	0.0
>50	7	12.5	1	5.3
Sales: < $100,000	17	32.1	6	37.5
$100,001–$250,000	12	22.6	2	12.5
$250,001–$500,000	4	7.5	2	12.5
$500,001–$1 million	6	11.3	5	31.3
>$1 million–$2.5 million	3	5.7	0	0.0
>$2.5 million–$5 million	2	3.8	0	0.0
>$5 million–$10 million	3	5.7	1	6.3
>$10 million	6	11.3	0	0.0

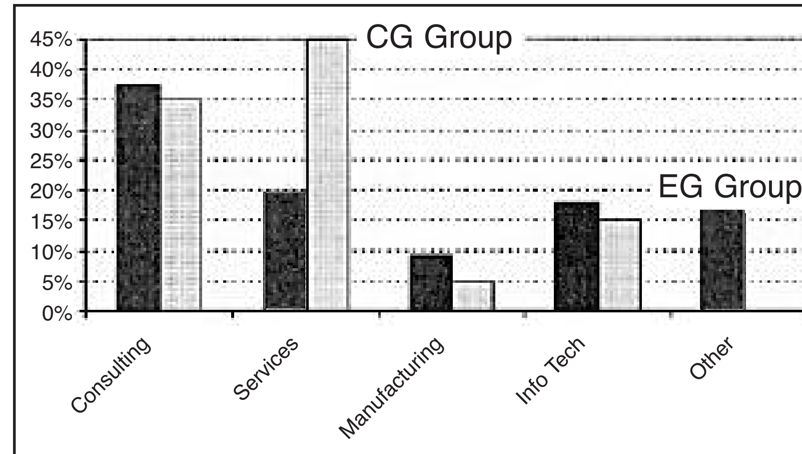

Figure 1.Types of businesses owned

Is there a difference in venturing rates according to whether graduates have taken an entrepreneurship course?

The results in relation to business ownership show statistically significant differences between graduates who have taken a course in entrepreneurship and those who have not. Those who have taken a course in entrepreneurship have a higher tendency to start their own business and to do so more quickly after graduation. Of those who had taken an entrepreneurship course, 34 percent (CG 19%) were current businessowners and 48 percent (CG 26%) had been an entrepreneur at some time since graduation. These findings raise interesting questions to be addressed in future research regarding motivation to start a business. Do students elect to take the course because they feel pulled into entrepreneurship (Amit and Mueller 1994)? Do these graduates then choose a particular career path that will facilitate venturing at some time in the future? For example, when they have acquired the necessary "chunks of venturing knowledge" (Timmons 1999).

Clearly the course in entrepreneurship produced effective outcomes. It provided venturing awareness and venture readiness skills and knowledge. Future research should address these questions: Does the course introduce or reinforce a different way of thinking that enables graduates to recognize and act on venture opportunities? Do networks created during, and after the course, facilitate venturing, as has been reported in the literature (Aldrich and Zimmer 1986)? Does the presence of a mentor who is venturing experienced and technically expert, in the form of the course instructor, contribute to an increased venturing rate? (Mentoring starts during the course but continues through the venture creation and growth stages.) The results indicate that a single course in entrepreneurship is an effective means of increasing the venturing rate of engineering graduates. Further research should focus on the aspects and components of the course that are most effective.

Do engineering graduates venture at a rate above the population in general?

The results show that engineering graduates, in general, have a higher venturing rate than the general population. Nineteen percent of the control group were businessowners; moreover, at some time 26 percent had owned a business. The most recent numbers available from the Canadian Census show that only 16 percent of the Canadian population are self-employed. Given that the survey respondents are still fairly young in terms of career expectancy, it can be assumed that there will be an increased rate of venturing as the cohort ages.

Recent research has found that technical training and experience enhanced the likelihood of venturing (Fiet and Samulesson 2000). It may thus be possible to increase the venturing rate of engineering graduates, in general, if entrepreneurship courses were offered as part of a degree in engineering rather than only as an elective.

Do engineering graduates start technology-related ventures?

The results show that engineering graduates start a range of businesses. Most businesses they start are related to engineering (e.g., consulting, information technology, manufacturing). However, some businesses are not what would be generally considered technology-based. Restaurants, landscape gardening, and a tutoring service are among the "low-tech" start-ups. Further research is required into how the businesses started by graduates are related to their engineering degree. This study shows that many engineering graduates create technology-based start-ups, which are leveraged on their engineering skills and knowledge, rather than low-technology ventures.

Technology-intensive new ventures have greatly enhanced outcomes if there is extensive use of networking by the lead entrepreneur(s) (Zhao and Aram 1995). One of the major advantages of taking a course in entrepreneurship may be the training in network creation and maintenance and the opportunity to capitalize on existing and new networks. The mentoring role of the course instructor may also be useful for nurturing technology-related ventures. There are many other important variables that determine the type of venture. In subsequent stages of the longitudinal study of engineering graduates, the opportunity-identification process in relation to business creation will be examined.

Implications for Theory, Practice, and Policy

Findings from this study contribute to the growing literature on whether entrepreneurship can be taught. Results from this study indicate that entrepreneurship education is an effective way to increase the venturing rate of engineering graduates. The study provides results that have quantified the venturing rates for two groups of engineering graduates. Furthermore, it has provided business characteristics and performance data. This research is useful for advancing the debate on the value of entrepreneurship education. These findings show that further research is necessary to advance theories on the importance of push and pull factors, networking, and the cognitive disposition to venture. The study provides a model to critique and replicate in an attempt to build theory about a range of questions relating to venturing.

This research is valuable for educators who are currently teaching entrepreneurship. Knowledge regarding the high venturing rate may have an influence on the scope and content of course material. Knowing that almost a third of graduates may start a business within two years of graduation, indicates that practical application is an important part of course content. Educators and trainers in a range of organizations will find that the venturing rates reported here provide a benchmark for measuring the success rate of their courses. Furthermore, the time frame within which graduates venture and the performance data on businesses allows for comparisons with other cohorts in universities, colleges, and training facilities.

At the policy level, this study shows university administrators that entrepreneurship education is effective in producing alternative career paths for graduates through an increase in self-employment and business ownership. High graduate employment is an important measure of success for most education programs. Thus, these findings are important for administrators in all educational establishments, and also in a range of disciplines, not just engineering. At the government level, the study indicates that for a small investment in education, regional and national economic growth may be increased. Governments worldwide are seeking to increase the number of business starts and especially high–technology-related ventures. This study indicates that entrepreneurship education is important as engineering graduates can be a major driver of economic growth through their technology-based start-ups.

Conclusions

This article has addressed four research questions. It would appear that engineering graduates are a prime group for starting technology-related businesses at rates above the general population. Among those who elect to take some entrepreneurship education, there are an astonishingly high number of ventures started after graduation (48% businessowner at some time, 34% current businessowner). Further research is required to establish whether it is a natural inclination that leads to the higher venturing rate, or whether raising awareness of entrepreneurship as a viable career and teaching some readiness skills can nurture technology start-ups among engineering undergraduates. What is clear, however, is that so far in Canada, too few faculties of engineering provide entrepreneurship courses for engineering undergraduates. Perhaps it can be argued that students can look elsewhere for this training. Alternatively, students can acquire these skills following graduation, when they have more work experience. There are two arguments against this perspective. First, it is important to include a course in entrepreneurship within an undergraduate program to relay venturing awareness as well as readiness skills and knowledge. Second, as engineering graduates are venturing relatively soon after graduation, it is important to provide venturing readiness skills and knowledge during their undergraduate education.

Endnote

1. Contact the authors for a copy of the questionnaire.

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Acknowledgments

The authors acknowledge the assistance of their research assistants Roisin O'Connor, Han Zhu, and Mary Jane Ruscio.

Preliminary results of the initial stages of this longitudinal study of engineering graduates were presented at the Canadian Council for Small Business and Entrepreneurship Annual Meeting in Banff, Alberta, in November 1999. A paper based on the current sample and dealing with satisfaction with entrepreneurship education and career path was presented at the 2001 Canadian Conference on Engineering Education (C2E2) in Victoria, British Columbia, in August 2001.

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New England Journal of Entrepreneurship
College of Business
Sacred Heart University
5151 ParkAvenue
Fairfield, Connecticut 06825-1000

New England Journal of Entrepreneurship
Volume 5 Number 2
Fall 2002