The Canadian Journal
of Career Development

Revue canadienne de
developpement de carriére

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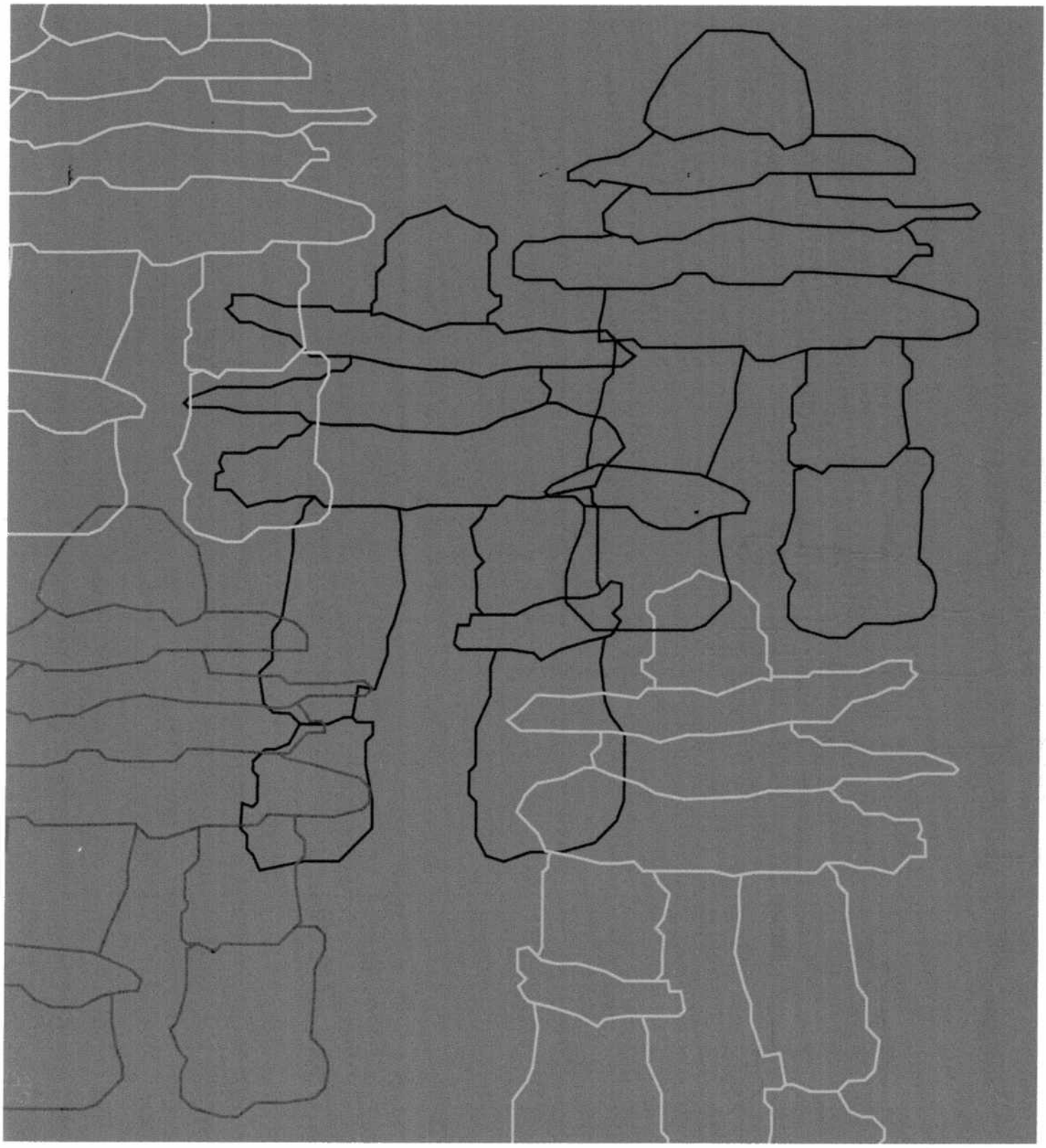
Vol. 9 / No. 1



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Canadian Journal of Career Development/Revue canadienne de développement de carrière
Robert Shea, Editor/Rédacteur
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The journal is published with grant support from the Canadian Education and Research Institute for Counselling (CERIC). The opinions expressed are strictly those of the authors and do not necessarily reflect the opinions of the Canadian Journal of Career Development, Memorial University of Newfoundland or CERIC officers, directors, or employees.

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Canadian Journal of Career Development/
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ISSN 1499-1845 (Print)/ISSN 1499-1853 (Online)
Printed in Canada/Imprimé au Canada

The Canadian Journal
of Career Development

Revue canadienne de
developpement de carriére

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Editorial

It is with great pleasure that I present Volume 9, Number 1, 2010 issue of the Canadian Journal of Career Development/Revue canadienne de développement de carrière.

This issue marks nine years of publishing the Journal. We are proud of how the Journal has matured. It is a vehicle for the dissemination of cutting edge research from coast-to- coast in Canada. It has also emerged as a leader in the international career community. This recognition is due to each and every one of you – the readers, the authors, and the career practioners who work to enhance the lives of individuals through the vocation of career development.

Over the next year we will be spending some time engaging our readers and authors in a review of what they would like to see the Journal become. In 2011, we will celebrate a decade of publishing. We are very proud of that accomplishment and will be doing something to celebrate and mark the occasion. With over 2,700 individual subscribers, an annual distribution of over 2,000 hard copies of the journal and thousands of article downloads from our website each year, we believe we are well positioned to build the Journal into a more vibrant, timely and effective vehicle to disseminate current research. We hope you will join us on this journey into the next decade.

As always, I would like to take this opportunity to thank the authors for their time and expertise. Without these significant and well written pieces of research our work as practioners would be significantly limited.

To my Associate Editor, Ms. Lisa Russell and Administrative Assistant, Ms. Yvonne Abbott, I want to publicly say thank you for your many years of commitment to ensuring each and every issue is delivered to the printers in a timely and efficient manner. Producing two issues a year requires commitment and organizational skills and both of these wonderful people have those qualities in abundance.

I hope you enjoy this issue!

Rob

Robert Shea
Founding Editor
Canadian Journal of Career Development/
Revue canadienne de développement de carrière

The Canadian Journal
of Career Development

Revue canadienne de
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Etta St. John Wileman Award
For Lifetime Achievement in Career Development

Why develop this award?

This award is designed to recognize and celebrate individuals who have devoted their lives to furthering the profession of career development.

- To celebrate individuals who have established themselves as leaders within our profession.
- To recognize leaders who combine the role of researcher, educator, author, practioner and career leader.
- To encourage individuals in Canada and around the world to celebrate those around us who have contributed so much to our identity as career development professionals.
- To establish a significant and uniquely Canadian award that recognizes those individuals who have devoted their lives to the enhancement of career development practice, administration, research and education.

Who can be nominated?

Individuals who have demonstrated significant and long term commitment to the principles and experience outlined above.

When is the award presented?

The award is presented at the annual CANNEXUS Conference in Canada. The award is presented on a less than annual basis as is determined by the selection committee.

Who will comprise the selection committee?

The selection committee is comprised of the Founding Editor of the Canadian Journal of Career Development; a previous award winner; a career practioner; and the President of the Canadian Education and Research Institute for Counselling.

What is awarded?

The award recipient will be presented with a hand made Innukshuk by an Inuit artisan from Newfoundland & Labrador, Canada. The Innukshuk is made from a precious stone called Labradorite native to the coast of Labrador. Each award will be presented at the annual CANNEXUS Conference.

Submissions

To ensure confidentiality and to minimize disappointment it is requested that the nominee not know about the nomination in advance.

Submissions should attest to each of the principles outlined above in the section - Why develop this award? This is an award for significant and lifetime commitment to career development. Unsuccessful nominations will be considered for a period of two further years.

Nominations

Nomination packages should be sent to:

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An Examination of Rural Secondary Students' Post-Secondary Education Decisions

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Abstract

Canadian post-secondary education policies are increasingly oriented toward increasing the educational participation and attainment levels of under-represented groups such as rural populations. To better understand how rural students' post-secondary education decisions are influenced, this study utilizes logistic regression analyses in an examination of survey data from 1,169 graduating rural students at 72 rural schools across the province of Newfoundland and Labrador. We observed that rural students' decisions to continue education at the post-secondary level are strongly influenced by academic factors, and that first-generation students and students who do not consider student loans to be a funding option for them are at a particular disadvantage. The results also suggested that the choice between university and non-university studies is significantly impacted by academic factors, gender, and after school activities, but less dependent on rural students' sources of financial support.

An Examination of Rural Secondary Students' Post-Secondary Education Decisions

Increasingly, the success of the Canadian economy and its citizens is predicated on a high-skills/high-wage economic strategy – a strategy which presumes the availability of a large pool of post-secondary educated workers. Figures cited by the Government of Canada and the Canadian Council on Learning confirm that the number of jobs requiring post-secondary education and training are increasing on an annual basis and that upwards of two-thirds of all job openings over the next ten years will be in occupations requiring some form of post-secondary education (Canada, 2007; Canadian Council on Learning, 2007). With the demographic reality of the baby boom generation moving toward their retirement years and high school graduate populations in decline in a number of provinces, a larger proportion of Canada's young adults will need to complete post-secondary education and training if the country's future workforce requirements are to be met.

Although the degree to which educational attainment can facilitate upward social mobility is to some extent limited, post-secondary education remains the primary mechanism by which low-income and disadvantaged groups can rise above the socio-economic position of their families and more fully participate in the public sphere. The existing research literature provides relatively few details about how Canadian secondary school students consider and choose their post-graduation destination, be it the workforce or further study. As is the case with many topics in post-secondary education research, considerable study has been given to students' college choices in the United States (Lapan, Tucker, & Kim, 2003). This body of research has been directed toward gaining a better understanding of how students make decisions about their post-secondary education opportunities. Important influencing factors include student academic ability; encouragement, expectations and educational attainment of parents; parental income and socio-economic status; teachers and guidance counsellors; race and ethnicity; and gender (Hossler, Schmit, & Vesper, 1999; Liu et al., 2004; McMahon & Patton, 1997; McDonough, 1997; Sandefur, Meier, & Campbell 2006).

Student choices about post-secondary education are strongly correlated with parental educational attainment (Barr-Telford, Cartwright, Prasil, & Shimmons, 2003; Butlin, 1999; Choy, 1999, 2001; Hango & de Broucker, 2007; Lowe & Krahn, 2000) and the family income levels (Bell & Anisef, 2005; Butlin, 1999; Corak, Lipps, & Zhao, 2003; University of Alberta, 2001). Lower parental educational attainment levels and household incomes tend to reduce the probability of post-secondary participation. In her study of the relationship between participation in post-secondary education and family background, Drolet (2005) concluded that, "when taking account of both parental education and parental income, university participation rates are more strongly associated with parents' level of education than with their income" (p. 4).

As Deschenes (2007) points out, there is a "strong correlation between the educational attainment of parents and children, which may contribute to the transmission of socio-economic status and inequality across generations (p. 271)." Research has shown that the higher the socio-economic status of parents, the "higher" their children's educational plans extend. Students from more affluent backgrounds are more likely than lower-status youth to pursue post-secondary studies, and when they do go on to participate in post-secondary study higher-status youths are more likely to attend university rather than other types of post-secondary education such as community colleges or private training institutes (Butlin, 1999; Christofides, Cirello, & Hoy, 2001; Corak et al., 2003; Hossler et al., 1999; Looker & Lowe, 2001; McDonough, 1997).

Rural Youth

It is generally understood that urban youth in Canada are more likely to attend university than rural youth. This finding has been substantiated by numerous studies of youth transition from high school (Butlin, 1999; Finnie, Las-

celles, & Sweetman, 2005; Frenette, 2004, 2006, 2007b; Hango & de Broucker, 2007; Looker, 1993: Looker & Dwyer, 1998; Shaienks & Gluszynski, 2007; University of Alberta, 2001). Various explanations for this rural/urban participation disparity have been put forward including the effect that proximity to a post-secondary institution has on secondary students' decisions to enrol in further studies. One possible reason for this is that rural students necessarily incur additional living expenses associated with living away from home. Students who move away from home to complete a 4-year degree often pay an estimated $20,000 more than those who can continue to live with their parents while studying (Barr-Telford et al.; 2004; Finnie, 2002).

A number of studies have demonstrated that rural students have "lower" educational and occupational aspirations than those of urban students (Bajema, Miller, & Williams, 2002; Conrad, 1997; Haller & Virkler, 1993; Jeffery, Lehr, Hache, & Campbell, 1992). There is also evidence to suggest that rural youths who do choose to continue their education at the post-secondary level are more likely to attend a community college (or other non-university type of institution) rather than a university (Newfoundland and Labrador, 1998; Shaienk & Gluszynski, 2007). These differences have been attributed to the socio-economic conditions in rural communities (Conrad, 1997; Dupuy, Mayer, & Morissette, 2000; Haller & Virker, 1993), the relatively smaller numbers of higher status role models in rural areas compared to that of urban communities (Cahill, 1992; Jeffery, Lehr, Hache, & Campbell, 1992), and differences in the career development and aspirations of rural and urban individuals (Bajema, et al, 2002; Conrad, 1997; Haller & Virkler, 1993; Marshall, 2002). While few specifics are known about the types of information sources that rural students in Canada utilize during the post-secondary choice process, previous research has shown that Canadian youth tend to rely on parents, friends, teachers and guidance counsellors for career advice and help with post-secondary educational plans (Bell & Bezanson, 2006; Looker & Lowe, 2001; Sharpe & Spain, 1991; Sharpe & White, 1993).

Conceptual Approaches

Social Reproduction Theory

Differences in the post-secondary participation behaviours between youths of differing socio-economic backgrounds have been accounted for using the theories of cultural and social capital. Bills (as cited in Pascarella, Pierson, Wolniak, & Terenzini, 2004) frames cultural capital as the "degree of ease and familiarity that one has with the 'dominant' culture of a society" (p. 252). Cultural capital, conveyed from parents to children, is the sum total of all of the intangible goods, such as the milieu and leisure time that fosters intellectual and cultural reflection, that sustain and predict the academic success and ambition of those in the middle- and upper-income strata. Bourdieu (1977, 1986) argues that the cultural capital inherited by those in the middle- and upper-class produces a confidence and disposition that is a very strong indicator of academic and social success.

Social capital is a form of capital that facilitates the transaction and the transmission of different resources among individuals through their relationships for mutual benefit (Coleman, 1988; McDonough, 1997). Those individuals who have access to information about post-secondary education through their social networks have greater access to cultural capital and are more likely to be at an advantage in accessing and understanding information and attitudes relevant to making decisions about their post-secondary options. In the case of rural student post-secondary education participation rates, theories of cultural and social capital are a critical tool in examining why we observe lower rates of participation amongst rural populations even where their income is comparable to or greater than their urban counterparts. Indeed, Bourdieu (1984) makes the argument that access to the cultural and educational opportunities offered by urban communities is, in and of itself, a form of cultural capital that, like all capital, defines social difference and disparity.

Student Choice Model

McDonough (1997) outlines the three basic approaches that have been taken in the study of college choice decision-making. These include:

1. social psychological studies, which examine the impact of academic program, campus social climate, cost, location, and influence of others on students' choices; students' assessment of their fit with their chosen college; and the cognitive stage of college choice;
2. economic studies, which view college choice as an investment decision and assumes that students maximize perceived cost-benefits in their college choices; have perfect information; and are engaged in a process of rational choice; and
3. sociological status attainment studies, which analyze the impact of the individual's social status on the development of aspirations for educational attainment and measure inequalities in college access. (p. 3)

Researchers have developed a number of models that attempt to explain the stages in students' post-secondary decision-making (Cabrera & La Nasa, 2000). The current study takes into account the conceptual model developed by Hossler and Gallagher (1987, as cited in Hossler et al., 1999) which identifies three key stages of post-secondary choice decisions: predisposition, search and choice. This model is illustrated in Figure 1

Figure 1. Hossler and Gallagher Model of College Choice. Adapted from Hossler, D., Schmit, J. L., & Vesper, N. (1999). *Going to college: How social, economic, and educational factors influence the decisions students make*. Baltimore, MD: Johns Hopkins University Press.

In the predisposition phase, secondary school students begin to see post-secondary education as an important step in achieving their personal and occupational goals. During the search stage, which is heavily influenced by parents, students refine their options, develop preferences and consider their qualifications for admission and options for financing their decision. In the final

phase, the choice phase, students are influenced by factors that are both economic and sociological in nature. This model is particularly useful in considering the sequencing of factors that impact the decision-making process for students and parents and the role of guidance officials and other external influences.

While a small number of research studies have examined student transitions from secondary school to post-secondary education and the workforce in Newfoundland and Labrador (McGrath, 1993; Sharpe & Spain, 1991; Sharpe & White, 1993), none have specifically examined the post-secondary participation and non-participation decisions of rural high school students. The focus of our research for this study was to examine a number of the characteristics and behaviours that influence the post-secondary education decisions of rural secondary school students. Hossler and Gallagher's student choice model and the findings of previous studies of Canadian youth transition were the basis used to select factors that were expected to impact rural students' post-secondary plans and, in the event that they did choose to participate in post-secondary education, whether they would choose university or a non-university institution.

Methodology

Participants

Proportionally speaking, Newfoundland and Labrador has a significantly larger rural population than Canada as whole. Approximately 40% of the population of the province lives outside centres with a population of 1,000 and outside areas with 400 persons per square kilometre. Most (65%) of the province's 285 schools are considered to be rural schools (Newfoundland & Labrador, 2006).

For this study, we conducted a survey of graduating students at 72 rural schools. These schools had a combined population of 2,113 students in their final year of secondary school. In May and June of 2007, teachers at participating schools administered the questionnaires which were completed by students during classroom time. All completed surveys were then returned to the researchers in the postage pre-paid envelopes. A total of 1,169 students completed and returned surveys out of the 2,113 eligible survey participants. The overall response rate of approximately 60% was considered satisfactory for the purposes of this research.

Outcome Variables

Two outcomes related to rural students' post-secondary education decisions were selected for examination. First, we examined whether or not students planned to pursue studies at the post-secondary level after completing secondary school (0 = no, 1 = yes). Next, of those students who indicated that they planned to continue on with further studies after high school, we examined if students chose a university program (coded 1) or a non-university program (coded 0).

Predictor Variables

Drawing on previous studies of youth transition to post-secondary education that have been carried out in Canada (Anisef, Frempong, & Sweet, 2005; Davies, 2005; Finnie et at., 2005; Frenette, 2004, 2006, 2007b; Hango & de Broucker, 2007; Looker, 1993: Looker & Dwyer, 1998; Sharpe & White, 1993), we designed a survey questionnaire to collect information from rural secondary students about various demographic characteristic and academic performance variables that are known to influence post-secondary education decisions. The questionnaire also included questions about students' after school activities, a series of forced choice items organized on a Likert-type scale regarding secondary students' sources of information about further studies, and a number of questions about potential sources of funding for post-secondary education. Table 1 provides descriptions of the operational definitions used for each of the predictor variables.

Three "demographic characteristic" variables were included in the model for this analysis: gender, the number of siblings they had, their family structure and whether they were "first-generation" students or "legacy generation" students. The family structure variable was operationalized in accordance with the number of parents or guardians that children lived with – one parent, two parents or other for students who reported alternative living arrangements. The "first-generation" student group comprised students whose parents did not complete post-secondary studies while the "legacy generation" group consisted of students who have one or more parents who completed a post-secondary program at college or university.

Academic performance was measured by two variables. The type of mathematics course completed in Level III (none, basic, academic or advanced) was used as a proxy for the academic rigor of the high school curriculum completed by students. Students' self-reported overall academic average at school was used to assess their level of overall academic achievement.

Students' participation in after school activities was assessed by a question in which survey respondents were asked: "How have you spent your time after school and on weekends this school year?" Possible responses to this question included: working part-time, volunteering, homework, and extracurricular activities (e.g., sports, clubs).

The sources of information that students accessed in making their career plans were appraised by student responses to the following survey item: "Listed below are people and sources of information that students often rely on when deciding what to do after high school." Each of the following 10 potential information sources were rated by respondents on a Likert-type scale (5 = very important, to 1 = not important at all): friends; parents; brothers or sisters; college or university students; high school teachers; guidance counsellor; college or university campus tour; promotional materials/ brochures; television or print advertising; and recruitment officer from a post-secondary institution.

The final set of predictor variables were derived from a survey question that asked students the following: "Besides your family, which of the following can you rely on to help pay for post-secondary education?" Responses included: unsure; summer job; part-time job during the year; full-time job during the year; scholarship; bursary; student loan; private bank loan; personal savings and tuition voucher. In two in-

Table 1: Description of Independent Variables in the Model

Variable	Description
Demographic characteristics	
Gender	0 = male, 1 = female
Number of siblings	Number of brothers/sisters
Family Structure	0 = one parent, 1 = two parent, 2 = other, dummy coded with one parent as reference category
Generation	0 = first generation (parents did not complete post-secondary education), 1 = legacy generation (at least one parent completed post-secondary education)
After School Activities	Survey question: "How have you spent your time after school and on weekends this school year?"
Works part-time	0 = no, 1 = yes
Volunteers	
Homework	
Extracurricular (e.g., sports, clubs)	
Academic Performance	
Level III math completed	0 = none, 1 = practical/basic, 2 = academic, 3 = advanced, dummy coded with none as reference category
Overall achievement	Self-reported overall average mark in school
Sources of Information	Survey question: "Listed below are people and sources of information that students often rely on when deciding what to do after high school."
Friends	Rating on a scale of 1 to 5, with 1 being 'not important at all' and 5 being 'very important',
Parents	
Brothers or sisters	
College or university students	
High school teachers	
Guidance counsellor	
A College or university campus tour	
Promotional materials/ brochures	
Television or print advertising	
Recruitment officer from a post-secondary institution	
Sources of Funding	Survey question: "Besides your family, which of the following can you rely on to help pay for post-secondary education"?
Unsure of funding	0 = no, 1 = yes
Summer job	
Work during academic year	
Scholarship/bursary	
Student loan	
Private bank loan	
Personal savings	
Tuition voucher	

Table 2: Descriptive Statistics for Selected Demographic Characteristic and Academic Performance Variables

Variable		Model 1			Model 2*		
		% Going to PSE (87.9%)	% Not Going to PSE (12.1%)	% Total	% University (41.8%)	% Non-University (58.2%)	% Total
Gender	Male	45.9	58.6	47.5	30.5	56.3	45.5
	Female	54.1	41.4	52.5	69.5	43.8	54.5
Generation	First	40.1	63.6	42.9	32.2	45.8	40.0
	Legacy	59.9	36.4	57.1	67.8	54.2	60.0
Family Structure	1 parent	16.5	25.5	17.3	12.4	19.2	16.4
	2 parent	81.4	73.6	80.7	86.1	78.2	81.5
	other	2.1	0.9	2.0	1.5	2.6	2.1
Level III math	None	3.6	11.5	4.6	0.2	5.7	3.4
	Basic	18.3	46.8	21.7	1.0	29.4	17.5
	Academic	23.4	18.7	22.9	18.6	26.8	23.4
	Advanced	54.6	23.0	50.8	80.1	38.1	55.7

* A number of students did not provide an indication of their choice (i.e., university/non-university).

Table 3: Descriptive Statistics for Students' After School Activities

Variable		Model 1			Model 2		
		% Going to PSE	% Not Going to PSE	% Total	% University	% Non-University	% Total
After School Activities							
Part-time work	Yes	32.1	22.2	30.9	35.8	29.3	31.9
	No	67.9	77.8	69.1	64.2	70.7	68.1
Volunteering	Yes	40.2	25.4	38.4	55.0	29.8	40.3
	No	59.8	74.6	61.6	45.0	70.2	59.7
Homework	Yes	85.5	69.3	83.6	98.5	77.0	86.0
	No	14.5	30.7	16.4	1.5	23.0	14.0
Extracurricular	Yes	67.6	45.3	64.9	79.5	59.5	67.8
	No	32.4	54.7	35.1	20.5	40.5	32.2

Table 4: Mean Values for Students' Sources of Information

Variable	Model 1			Model 2		
	% Going to PSE	% Not Going to PSE	% Total	% University	% Non-University	% Total
Friends	3.13	3.35	**3.16**	3.01	3.22	3.13
Parents	3.77	3.65	**3.76**	3.80	3.75	3.77
Siblings	2.75	3.17	2.80	2.72	2.75	2.74
College or university students	2.82	2.40	2.77	2.98	2.72	2.83
Teachers	3.07	2.90	**3.05**	3.29	3.08	2.93
Guidance counsellors	2.77	2.60	2.75	2.89	2.70	2.78
Campus tour	2.44	2.01	2.39	2.51	2.40	2.45
Promotional materials	2.58	1.95	2.51	2.67	2.53	2.59
Advertising (TV, print)	1.94	2.16	1.96	1.86	1.99	1.94
Recruitment officer	2.48	2.14	2.44	2.77	2.28	2.49

Table 5: Descriptive Statistics for Sources of Funding for Post-Secondary Education

Variable		Model 1			Model 2		
		% Going to PSE	% Not Going to PSE	% Total	% University	% Non-University	% Total
Unsure of funding	Yes	4.9	23.4	7.1	2.7	5.5	4.3
	No	95.1	76.6	92.9	97.3	94.5	95.7
Summer job	Yes	71.1	45.4	67.9	80.4	66.6	72.4
	No	28.9	54.6	32.1	19.6	33.4	27.6
Work during year	Yes	52.1	46.1	51.3	45.9	56.4	52.0
	No	47.9	53.9	48.7	54.1	43.6	48.0
Scholarship/bursary	Yes	36.6	12.1	33.6	56.6	23.4	37.3
	No	63.4	87.9	66.4	43.4	76.6	62.7
Student loan	Yes	64.6	37.6	61.3	66.8	64.9	65.7
	No	35.4	62.4	38.7	33.2	35.1	34.3
Private bank loan	Yes	8.6	11.3	8.9	6.8	10.5	9.0
	No	91.4	88.7	91.1	93.2	89.5	91.0
Personal savings	Yes	33.1	21.3	31.6	38.8	29.5	33.4
	No	66.9	78.7	68.4	61.2	70.5	66.6
Tuition voucher	Yes	18.3	3.5	16.5	32.4	9.0	18.8
	No	81.7	96.5	83.5	67.6	91.0	81.2

stances, two items in this set of variables were combined to produce a single item. Part-time job during the year and full-time job during the year became work during academic year; and scholarship and bursary were combined into one variable (scholarship/bursary).

Results

Descriptive Statistics

Of the 1,169 completed surveys, useable data were available for 1,161. Descriptive statistics for the outcome variables and selected demographic characteristic and academic performance and predictor variables are provided in Table 2. Only 12.1% of the rural students indicated that they were not planning to participate in some form of post-secondary education. Of the students who indicated their post-secondary preference, most (58.2%) did not plan to attend university. Most of the students in the study were legacy generation students (57.1%), and 50.8% had completed an advanced-level math course in Level III.

With regard to their after school activities, 83.6% of rural students indicated that they spent some of their time after school completing homework assignments (see Table 3). The second most common type of after school activity selected was extracurricular activity such as sports or clubs (64.9%).

The 3 sources of information that students relied on most when making their plans for after high school were 1) parents, 2) friends and 3) teachers (see Table 4).

As reported in Table 5, the students' anticipated primary sources of funding, aside from their family, were income from a summer job (67.9%), a student loan (61.3%) or employment income earned during the school year (51.3%). Only 7.1% of students indicated that they did not know of any source of funding that they could rely on other than their family.

Logistic Regression Analyses

In recent years, logistic regression analysis has increasingly been employed in post-secondary education and higher education research (Anisef et al., 2005; Arbona & Nora, 2007; Madgett & Bélanger, 2007; Peng, Lee, & Ingersoll, 2002; Wright, Scott, Woloschuk, & Brenneis, 2002; Perna, 2000). As with previous studies, we selected logistic regression because it can be used to predict which one of two categories a person will belong to given a number of independent predictor variables. Logistic regression was used to examine the significance of the variables in two hypothesized models (described below) which reflect the research questions. These statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 15.0 for Windows.

Model One: Choosing Post-Secondary Education

The first logistic regression was performed to assess the impact of selected factors on the likelihood that students would report that they planned to continue on to post-secondary education after finishing their final year of high school (coded 1) versus not continuing on to post-secondary education (coded 0). The 28 predictor variables entered into the logistic regression equation included 3 demographic characteristic

Table 6: Logistic Regression Predicting Rural High School Students' Likelihood of Choosing Post-Secondary Studies

Predictor	β	SE β	Wald's χ^2	*df*	*p*	Odds Ratio	95% C.I. for Odds Ratio	
							Lower	Upper
Constant	-8.681							
Demographic characteristics								
Gender	.556	.354	2.464	1	.116	1.744	.871	3.494
Number of siblings	-.013	.111	.014	1	.906	.987	.794	1.227
Generation	.918**	.338	7.383	1	.007	2.504	1.292	4.856
Two vs. one parent family	-.035	.401	.008	1	.931	.966	.440	2.120
Other structure vs. one parent	.806	1.317	.374	1	.541	2.239	.169	29.569
After School Activities								
Works part-time	.489	.389	1.579	1	.209	1.631	.760	3.498
Volunteers	.649	.388	2.796	1	.095	1.914	.894	4.097
Homework	-.091	.357	.065	1	.799	.913	.453	1.839
Extracurricular	-.044	.335	.017	1	.895	.957	.496	1.844
Academic Performance								
Level III math completed								
Basic vs. none	.132	.481	.075	1	.784	1.141	.444	2.929
Academic vs. none	1.532**	.571	7.195	1	.007	4.627	1.511	14.172
Advanced vs. none	2.204**	.582	14.355	1	.000	9.064	2.898	28.347
Overall achievement	.114***	.021	29.805	1	.000	1.121	1.076	1.167
Sources of Information								
Friends	.021	.154	.019	1	.891	1.021	.755	1.382
Parents	.630***	.164	14.764	1	.000	1.878	1.362	2.591
Siblings	-.896***	.164	29.708	1	.000	.408	.296	.563
College or university students	.832***	.185	20.162	1	.000	2.297	1.598	3.302
Teachers	-.374*	.172	4.714	1	.030	.688	.491	.964
Guidance counsellors	-.256	.152	2.843	1	.092	.774	.575	1.043
Campus tour	.014	.186	.006	1	.939	1.014	.705	1.460
Promotional materials	.998***	.218	20.923	1	.000	2.714	1.769	4.162
Advertising (TV, print)	-.490**	.182	7.240	1	.007	.612	.428	.875
Recruitment officer	-.205	.164	1.573	1	.210	.814	.591	1.122
Sources of PSE Funding								
Unsure of funding	-1.107*	.470	5.560	1	.018	.330	.132	.830
Summer job	.336	.360	.876	1	.349	1.400	.692	2.832
Work during academic year	.243	.362	.452	1	.501	1.275	.627	2.593
Scholarship/bursary	-.547	.560	.955	1	.328	.579	.193	1.733
Student loan	1.157**	.364	10.124	1	.001	3.182	1.560	6.491
Private bank loan	-.977	.568	2.958	1	.085	.376	.124	1.146
Personal savings	.791	.482	2.696	1	.101	2.205	.858	5.666
Tuition voucher	.352	.961	.135	1	.714	1.423	.216	9.355

Note: R^2 = .523 (Hosmer & Lemeshow), .271 (Cox & Snell), .597 (Nagelkerke). Model χ^2 (29) = 319.60, p < .001. * *p* < .05, ** *p* < .01, *** *p* < .001.

variables, 4 student after school activity variables, 2 academic performance variables, 10 post-secondary information source variables and 8 post-secondary funding source variables.

The full model with all predictors included was statistically significant, $\chi 2$ (29) = 319.50, p < .001, indicating that the model was able to distinguish between students who reported and did not report an intention to pursue post-secondary studies. The model as a whole explained between 27.1% (Cox and Snell R square) and 59.7% (Nagelkerke R squared) of the variance in student choices, and correctly classified 93.4% of cases. As shown in Table 6, 12 of the predictor variables made a unique statistically significant contribution to the model. These were: 1 demographic characteristic variable (generation), 3 academic performance variables (math taken in high school and overall achievement), 6 post-secondary information source variables (parents, siblings, post-secondary students, teachers, promotional materials and advertising) and 2 post-secondary funding source variables (unsure and student loan). None of the student after school activity variables was found to be significant.

With all other factors held constant, legacy generation students were more likely to indicate that they planned to continue on to post-secondary education than first-generation students. In fact, the odds that legacy generation students planned to continue to the post-secondary level was 2.5 times greater than the odds for a first-generation student.

Compared to students who completed no Level III math, the odds that students who completed an academic math course planned to pursue post-secondary education was 4.627 times greater. However, the strongest predictor that students would choose post-secondary studies was the completion of advanced-level Level III (Grade 12) mathematics, recording an odds ratio of 9.06. This indicated that students who planned to continue on to post-secondary education after high school were over 9 times more likely to have completed a Level III advanced math course as compared to students who did not complete any math in Level III, controlling for other factors in the model. Further, the odds ratio of 1.121 for student's self-reported overall academic performance indicated that for every 1% increase in student overall average grades, students were 1.121 times more likely to

intend to participate in post-secondary education.

Results of the logistic regression indicated that, among rural students, the likelihood of post-secondary educational plans was influenced by a number of information sources in the post-secondary choice process. Students who relied on their parents, post-secondary students and promotional materials from post-secondary institutions as sources of information in deciding what to do after high school were more likely to have plans to partake in post-secondary education. In contrast, students were less likely to have post-secondary plans if their key sources of information were their siblings, their high school teachers or newspaper, magazine, or television advertising.

Rural students' post-secondary plans were uniquely influenced by the sources of education financing on which they felt they could rely. Students who were uncertain that they could rely on any other source aside from their parents were 33% less likely to have plans to continue on to post-secondary education. However, those students who felt they could rely on student loans as a source of funds were 3.182 times more likely to have post-secondary plans.

Model Two: Choosing University

Table 7 presents the results of the second logistic regression model which was carried out to assess the impact of selected factors on whether students planned to attend university after high school (coded 1) versus a non-university post-secondary program (coded 0). As before, 28 predictor variables were entered into the logistic regression equation.

The statistically significant model was able to differentiate between students who intended to pursue university and non-university education, $\chi 2$ (29) = 645.78, $p < .001$. The model explained between 52.7% (Cox and Snell R square) and 70.9% (Nagelkerke R squared) of the variance in student choices, and correctly classified 94.7% of cases. Thirteen of the predictor variables made a statistically significant contribution to the second model. These variables were: 1 demographic charac-

Table 7: Logistic Regression Predicting Rural High School Students' Likelihood of Choosing University-Level Studies

Predictor	β	SE β	Wald's χ^2	*df*	*p*	Odds Ratio	95% C.I. for Odds Ratio	
							Lower	Upper
Constant	-22.198							
Demographic characteristics								
Gender	-.979***	.241	16.540	1	.000	.376	.234	.602
Number of siblings	.091	.093	.972	1	.324	1.096	.914	1.314
Generation	.313	.239	1.712	1	.191	1.367	.856	2.183
Two vs. one parent family	.006	.321	.000	1	.984	1.006	.536	1.889
Other structure vs. one parent	1.490	1.110	1.803	1	.179	4.438	.504	39.064
After School Activities								
Works part-time	.891**	.256	12.071	1	.001	2.438	1.475	4.030
Volunteers	.635**	.243	6.815	1	.009	1.887	1.171	3.039
Homework	2.133**	.701	9.247	1	.002	8.437	2.134	33.352
Extracurricular	.548*	.260	4.425	1	.035	1.729	1.038	2.881
Academic Performance								
Level III math completed								
Basic vs. none	-2.026	1.569	1.668	1	.197	.132	.006	2.854
Academic vs. none	1.781	1.180	2.276	1	.131	5.933	.587	59.975
Advanced vs. none	2.754*	1.175	5.492	1	.019	15.700	1.569	157.070
Overall achievement	.200***	.021	86.777	1	.000	1.221	1.171	1.274
Sources of Information								
Friends	-.334**	.122	7.534	1	.006	.716	.564	.909
Parents	-.160	.106	2.292	1	.130	.852	.693	1.048
Siblings	.090	.097	.860	1	.354	1.094	.905	1.324
College or university students	.012	.112	.012	1	.912	1.012	.813	1.261
Teachers	.475***	.129	13.617	1	.000	1.608	1.250	2.070
Guidance counsellors	.062	.102	.368	1	.544	1.064	.871	1.298
Campus tour	-.140	.111	1.574	1	.210	.870	.699	1.082
Promotional materials	-.260*	.125	4.351	1	.037	.771	.604	.984
Advertising (TV, print)	-.244	.140	3.035	1	.081	.783	.595	1.031
Recruitment official	.477***	.111	18.535	1	.000	1.611	1.296	2.001
Sources of PSE Funding								
Unsure of funding	.121	.558	.047	1	.829	1.128	.378	3.371
Summer job	.504	.276	3.343	1	.067	1.655	.964	2.840
Work during academic year	-.224	.238	.883	1	.347	.800	.501	1.275
Scholarship/bursary	.430	.249	2.991	1	.084	1.538	.944	2.504
Student loan	-.125	.254	.242	1	.623	.882	.536	1.453
Private bank loan	-1.649***	.449	13.494	1	.000	.192	.080	.463
Personal savings	.097	.245	.155	1	.693	1.101	.681	1.780
Tuition voucher	.760*	.309	6.069	1	.014	2.139	1.168	3.918

Note: R^2 = .551 (Hosmer & Lemeshow), .527 (Cox & Snell), .709 (Nagelkerke). Model χ^2 (29) = 645.78, $p < .001$. * $p < .05$, ** $p < .01$, *** $p < .00$

teristic variable (gender), all 4 of the after school activity variables, 2 academic performance variables (math taken in high school and overall achievement), 4 post-secondary information source variables (friends, promotional materials and recruitment official) and 2 post-secondary funding source variables (other bank loan and tuition voucher).

The analysis showed that, amongst the students who planned to continue on to post-secondary education after completing high school, male students were about 38% less likely than female students to indicate that they planned to attend university. The strongest predictor that students would choose university-level studies was the completion of advanced-level mathematics in Level III. In comparison to students who completed no math in Level III, the odds that students who completed advanced-level math planned to enrol in a university program were 15.7 times greater. Students' self-reported overall academic performance also played a significant role in plans to attend university. The odds ratio of 1.221 for this variable suggests that for every 1% increase in their overall grades the students were 1.221 times more likely to intend choose university.

Participation in all four after school activities included in the student survey increased the probability that students planned to attend university. Of these four, completion of homework had the greatest impact on students' chosen post-secondary destination. Students who indicated that they completed homework after school and on weekends were 8.437 times more likely to plan to attend university. For rural students planning to attend university, working part-time for a wage, volunteering and participating in extracurricular activities increased their probability of choosing university by 2.438 times, 1.887 times and 1.729 times respectively.

The results indicated that Level III students who demonstrated that they relied more heavily on their friends and institutions' promotional materials were more likely to plan to attend a non-university post-secondary program. Those rural students who were more likely to rely on their high school teachers or recruitment officials from post-secondary institutions were more likely to have plans to continue on to university after high school. In terms of the funding that students felt they could rely on, aside from their family, rural students who had earned a tuition fee voucher were 2.139 times more likely to intend to pursue university. Students who believed that they could use a private bank loan to cover their educational costs were 19.2% less likely to select a university program.

Discussion

This study analyzed data from a survey of graduating secondary school students at 72 rural schools to better understand how the decision of students to continue their education at the post-secondary level is impacted by a number of factors. The vast majority of the students in the study indicated that they planned to participate in post-secondary education and, consistent with other studies of rural students' transition plans (Looker & Dwyer, 1998; Newfoundland and Labrador, 1998; Shaienk & Gluszynski, 2007) most of the rural students surveyed in this study opted for a non-university form of post-secondary schooling.

Our analyses involved two separate comparisons. Students who indicated that they had chosen to take part in a post-secondary program were compared with those who had not chosen post-secondary education. Also, students who indicated that they had elected to attend university were compared to those who had selected a non-university post-secondary institution. The findings suggest that rural students' post-secondary education decisions are influenced, albeit somewhat differently, by their demographic characteristics, secondary school academic performance, participation in after school activities, sources of information about further studies and sources of funding for post-secondary education.

In this study, family structure and their number of siblings had no significant impact on the outcome of students' post-secondary decisions. As observed in other research findings (Barr-Telford et al., 2003; Butlin, 1999; Cabrera & La Nasa, 2000; Choy, 2001; Frenette, 2007b; Pascarella et al., 2004), the rural students whose parents had not completed post-secondary education, so called first-generation students, were less likely than their peers to have made a choice to participate in post-secondary education after high school. This finding may have been income-related since income and educational attainment tend to be positively correlated. It also may be the case that "legacy generation" rural students have access to a reservoir of information about post-secondary education that their peers are unable to access.

While gender had no significance influence on whether or not students planned to pursue studies at the post-secondary level, it did play an important role in whether students with post-secondary plans chose a university or non-university program. The observed female preference for university education is consistent with the trends observed at both the provincial (Newfoundland and Labrador, 2005) and national (Canadian Council on Learning, 2007) levels.

There were no significant differences in the model regarding the after school activities of students who did not plan to go on to post-secondary education and those who did. However, when those who were planning to attend were considered alone, we observed significant differences between their participation in part-time employment, volunteering, homework, and extracurricular activities. If we conceptualize these four after school activities as proxies for rural students' industry (working part-time), school engagement (homework), civic engagement (volunteering) and social and cultural capital (extracurricular activities), our findings suggest that compared to rural students who chose non-university post-secondary education, the university-bound rural students exhibit significantly higher levels of industry, school and civic engagement and social and cultural capital. This interpretation would appear to be consistent the results of similar research on the post-secondary participation of Canadian youth (Davies, 2005; Finnie et al., 2005; Shaienks & Gluszynski, 2007)

Also consistent with previous research (Butlin, 1999; Barr-Telford et al., 2003; Finnie et al., 2005; Shaienks & Gluszynski, 2007), our findings suggest that compared to other students, rural

students who demonstrate higher levels academic achievement, as evidenced by overall grades, are more likely to plan to pursue post-secondary education. Likewise, university-bound rural students are more likely to have academically out-performed students whose post-secondary plans are for community college or other non-university programs. This was not surprising considering that entrance requirements for post-secondary institutions are tied to high school marks and that universities tend to require higher average grades for admission. Similarly, students who completed a more rigorous high school curriculum, as demonstrated by the level of math completed, were both more likely to plan post-secondary education and more likely at the university level.

There have been few investigations of the specific sources of career and post-secondary education information that rural students tap into as they engage in decisions about their opportunities. Previous examinations of the key career influencers of youth have tended to indicate that young people rely on a combination of sources including on parents, peers, teachers and counsellors (Bell & Bezanson, 2006; Hossler et al., 1999; Looker & Lowe, 2001; Sharpe & Spain, 1991; Sharpe & White, 1993). Our results indicate that rural students who choose to pursue opportunities at the post-secondary level rely a great deal more than their peers on parents, post-secondary students and promotional materials from post-secondary institutions. Compared to students who chose a non-university option, students who chose university relied significantly more on information provided by teachers and recruitment officials. It is possible that these results might be, in part, explainable by influences that remain unspecified in our model. However, our findings are quite consistent with our understanding that the decision to participate in post-secondary education is a complicated process whereby students' decisions are informed and influenced by a diverse set of information sources.

Our results show that rural students are less likely to plan to go to post-secondary education if they are uncertain about how they can cover the associated costs. This observation is not surprising considering that financial barriers are one of the most commonly cited impediments to post-secondary participation cited by Canadian youth (Barr-Telford et al., 2003; Looker & Lowe, 2001; Shaienks & Gluszynski, 2007). We also observed that students with post-secondary plans are far more likely to indicate that student loans will be a source of their financial support. This is consistent with past research which shows that rural students tend to rely heavily on student loans and accumulate debt as they pursue postsecondary education (Kirby, 2003: Kirby & Conlon, 2006). With respect to the second model's comparison of students who were planning university with those planning for other types of post-secondary education, the single most interesting observation is the lack of difference in these two groups' planned sources of funding. This would suggest that, for rural students who decide to purse post-secondary education, the specific type of post-secondary education selected is not significantly influenced by their expected sources of funding.

In Summary

Increasing post-secondary participation among rural students continues to be an important policy concern for governments across Canada (Alberta, 2006; Newfoundland & Labrador, 2005; Ontario, 2005; Saskatchewan, 2007). Though not unequivocal, the following three generalizations about the influences on rural students' post-secondary decision-making processes are warranted as they have important implications for policy formulation: 1) rural students' decisions to continue education at the post-secondary level are strongly influenced by academic factors; however, first-generation students and students who do not consider student loans to be a funding option for them are at a particular disadvantage; 2) rural students' post-secondary choice are influenced by a variety of sources of guidance and support that my not necessarily be well-informed sources; and 3) rural students' selection of university and non-university studies are strongly connected to academic factors, gender, and after school activities, but less depended on students' sources of funding.

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A Longitudinal Study of the Effects of Context and Experience on the Scientific Career Choices of Canadian Adolescents*

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*This research was partly supported by Social Sciences and Humanities Research Council (SSHRC) Funding Grant.

Abstract

A longitudinal study was conducted on a sample of Canadian adolescents to track changes in science/math career choice development over a five-year span and to examine the impact of contextual and experiential factors on later choices. A previous study (Urajnik, Garg, Kauppi, & Lewko, 2007) explored the differential utility of contextual and experiential factors in the prediction of scientific career aspirations using data obtained from a national sample (n=3,306) of Canadian adolescents (13-19 years) who participated in the National Youth and Science Project Study (NYSPS). For the current study, five years after the initial data collection, 116 of the original participants were contacted to determine their field of study or nature of work (science or non-science). Results from a cross-tabulation of gender and career choice showed a significant difference between males and females in stability of career choice. Approximately 64% of males, but only 41 % of females, remained with their original science career choice. The main reasons cited by both males and females for moving away from a science career were a change in interests, difficulty with science and math courses, and the influence of work placement. Sequential logistic regression results indicated that measures of learning experiences, self-efficacy, outcome expectations, and interests contributed significant unique variance to the prediction of scientific career choice five years later. Learning experiences had the most influence on the career choice model. It affects career choice both directly and indirectly through self-efficacy, outcome expectations, and interests and explains 28% of the variance.

Introduction

Lent, Brown, and Hackett (1994) formulated a social cognitive model of career development derived from Bandura's (1986) general social cognitive theory that illustrates the interplay among personal, background/contextual, and experiential influences on career development. It focuses on dynamic mechanisms through which young people forge academic and vocational plans. The model includes personal input variables comprising personal characteristics such as gender, background/context variables comprising environmental characteristics such as parent and family influences, and learning experiences comprising variables such as objective performance, school experiences and role-modeling experiences. These variables shape and inform career-related self-efficacy (e.g., perceived task competence) and outcome expectations (e.g., anticipation of certain outcomes, such as self-satisfaction and financial reward). Self-efficacy and outcome expectations along with personal and contextual variables play an important role in the formation of interests and career goals. Figure 1 summarizes the social-cognitive career choice model proposed by Lent et al. (1994).

Relatively few studies have examined the theoretical constructs of the Lent et al. model from a domain-specific perspective (Ferry, Fouad, & Smith, 2000) and with samples other than college students (Fouad & Smith, 1996; Lopez et al., 1997; Plucker, 1998; Wang & Staver, 2001). Urajnik, Garg, Kauppi, and Lewko (2007) investigated the differential utility of contextual and experiential factors from Lent, Brown, and Hackett's (1994) social cognitive model of career choice in the prediction of scientific career aspirations prior to college entry. Data were obtained from a sample of Canadian adolescents (13 to 19 years) randomly selected from schools across Canada. The authors used the following variables in the study: person inputs included gender, grade-level, and primary language (English or French); background/context factors included socio-economic status, family cohesiveness, family social/scientific communication, family career encouragement, and parent scientific expectations/encouragement; learning experiences included science/math grades, perceptions of science/math teachers, and friends' interest in science; experiential constructs were self-efficacy, outcome expectations, and interests. Multivariate logistic regression analyses carried out in the Urajnik et al. (2007) study indicated that family background, scientific learning experiences, self-efficacy measures, outcome expectancies, and scientific interests contributed significant variance to the prediction of aspirations for pursuing a scientific career choice. Results of a final model revealed that students aspiring to a career

in the sciences were more likely than their peers to be male, senior students, to have higher grades in science, were more interested in science, and expected their science courses to be useful to their future career.

Although Urajnik et al. (2007) contributed significantly to career development research by demonstrating the usefulness of the Lent et al. (1994) model for a sample of Canadian adolescents in the context of science career choice, their study was cross-sectional in nature and the outcome variable was career aspirations rather than actual career choice. Longitudinal inquiry into career development is useful in that it can provide a theoretical understanding of the role that early aspirations play in determining career-related choices made later on (Rojewski & Yang, 1997; Ferreira et al., 2007). Vocational development is longitudinal in scope (Lent et al., 1994, 2000, 2001, 2002; Super et al., 1996; Schoon, 2001; Athanasou, 2002; Nauta & Epperson, 2003; Lent & Brown, February 2006). It is a process of nurturing interests, making choices, experimenting with and adjusting to those choices, and making more choices. Thus, to gain deeper understanding of this process, tracking changes in career choice over time and investigating the reasons for those changes is essential. It is equally important to identify and understand how proper contextual factors predict future choices. Timely and effective interventions to help challenged individuals overcome barriers and move forward with their choices depend on this knowledge.

Relatively few studies have followed changes in science/math career choice development and examined the later effects of contextual and experiential factors for high school students as they progress into post secondary education or the work place. Nauta and Epperson (2003), exploring gender issues in career choice development, have applied the social cognitive model used by Lent et al. to high school girls' choice of science/math/engineering college majors 3 to 5 years later. They found that high school math and science ability were central to making a choice to pursue a science career.

The present longitudinal study is built upon the earlier work of Urajnik et al. (2007) to track changes in science/math career choice development over a five-year span and to examine the medium-term impact of contextual and experiential variables on science career choices five years after the initial data collection. The current study also explores the stability of contextual and experiential factors in the interdiction of science career aspirations as well as science career choice.

Method

Sample

Participants in the study were obtained from the National Youth Science Project Study (NYSPS) conducted by a group of researchers from the Centre in Human Development a Laurentian University. The original study sample consisted of 3306 Canadian students (13 to 19 years). Five years after the original data collection, a random sample of 300 male and female participants who had participated in a school level science fair were selected to represent all provinces in Canada and all grade levels (grade 8 to senior high school). Given their involvement in a science fair, it was assumed that these participants were originally somewhat interested in science. Due to challenges associated with longitudinal research, the project team was only successful in contacting 116 of the 300 participants selected for the follow-up study. Telephone interviews were conducted to determine their field of study or nature of work (science or non-science). The demographic of the current study are as follows: 46% were males and 54% were females. At the time of the original data collection, 46% were in junior high school (grade 8 and 9), 40% were in intermediate high school level (grades 10 and 11); and 14% were in senior high school level. At the time of current data collection, nearly two-thirds were attending college or university on a full time (60%) or part-time (3%) basis; approximately a third were employed full time (30%) or part-time (5%) and a few (2%) were looking for employment.

Procedure

The original data collection involved a two-phase, convenience sampling design(Urajnik et al., 2007). In the first phase, competitors at the Canada Wide Science Fair (CWSF) were invited to participate in the study by completing the National Youth and Science Project Study (NYSPS) survey while in attendance at the fair. The nature of the study was explained to the students by a member of the research team, and participation was voluntary. The second phase involved the administration of the NYSPS to the comparison sample of students (attending the same schools as CWSF students) by their teachers during regular classroom sessions. The NYSPS is a self-report instrument comprised of items assessing general demographic information, achievement/schoolwork, perceptions of education and schooling, parental background, and family information. Items were adapted from the work of Krahn (1988) (Three City Study of the School to Work Transition), Breakwell, Fife-Shaw, and Devereaux (1988) (Youth, Science, and Technology), and items developed as part of a study conducted on Canadian high school students in the context of science career choices (Hein & Lewko, 1994). Measures included career choice/goals, person input, background/context, .earning experiences, self-efficacy, outcome expectations, and interest in science and math. For a complete description of these measures, see the original study (Urajnik et al., 2007). Participants completed the survey based on language of instruction (English or French), with language appropriate forms distributed to all students. Instrument administration required an average of 50-60 minutes.

Five years after the original data collection, a random sample was selected from the participants of the NYSPS project who had participated in a science fair at the school, regional or national levels with the assumption that these participants were likely to have had some interest in science. A research assistant from the Centre in Human Development at Laurentian University contacted the participants individually by telephone, or spoke with their parents if the participant could not be reached. The purpose of the study was explained to the participants (or their parents) and permission to conduct the follow-up interview was obtained. The

interview questions inquired as to what the participants were doing at the time with respect to school or work, and also what they had done over the five years since participating in the NYSPS project. For instance, participants were asked if they graduated from high school, continued on to college or university, and/or gained experience working part-time and/or full-time. If the participants indicated that they were in school, they were asked what type of post secondary program they were in, what their major field of study was, and what level of education they had attained thus far. If they said they had finished school, they were asked what their major field of study had been, and what type of work they were currently engaged in, if any. If the participants had changed from the field of study originally stated in the NYSPS project, they were asked about the reason for that change.

Results

Five years after the NYSPS project, 43 of the 116 participants were pursuing a science career. Of the 43 participants approximately 70% (30) were in school (university or college) full-time in a science program, 26% (11) were working in a science field, and 4% (2) were working part-time and going to school part-time in the science field. Seventy-three participants were pursuing a non-science career. Approximately 51% (37) of these participants were in school full-time (university or college), 37% (27) were working full-time, and 12% (9) were either working part-time and going to school part-time or unemployed. Descriptive statistics for the measures comprising the six theoretical-based constructs (person input, background/context, learning experiences, self-efficacy, outcome expectations, and interests) by science career choice (yes/no) are presented in Table 1. Preliminary analyses were carried out to assess the univariate significance between science career choice (yes/no) for the study measures, as well as correlations between measures. Significant differences as computed by t-tests or Chi-square (for categorical variables) were found for the following variables in favor of science career choice: gender, parental socio-economic status, family cohesiveness, science/ math grades, sci-

Table 1

Descriptive statistics for person input factors, background factors, scientific learning experiences, science/math self-efficacy, outcome expectations, and scientific interests by science career (yes/no) (Follow-up study n=116).

	Science Career				
	Yes	**n[1]**	**No**	**n**	**Total**
Person Input	**%**		**%**		**N**
Gender*					
Male	47.2	25	52.8	28	53
Female	28.6	18	71.4	45	63
Grade					
Senior (12+)	31.3	5	68.8	11	16
Intermediate (10-11)	41.3	19	58.7	27	46
Junior (8-9)	35.2	19	64.8	35	54
Language					
English	39.5	34	60.5	52	86
French	28.6	8	71.4	20	28
Background / Contextual	**(Mean(sd))[2]**		**(Mean(sd))**		
Parent Socio-economic Status (SES)**	55.65(18.55)	42	47.69(14.73)	69	111
Family Cohesiveness*	4.00(0.78)	41	3.68(0.85)	72	113
Communication – Social / Scientific Issues	2.72(1.00)	42	2.51(1.00)	72	114
Family Career Encouragement	3.31(0.98)	43	3.16(1.13)	71	114
Parent Science / Math Encourage / Expect's	4.48(0.76)	39	4.33(0.71)	70	109
Learning Experiences					
Science / Math Grades**	7.78(0.45)	43	6.84(1.60)	73	115
Perceptions of Science / Math Teachers	2.21(0.24)	42	2.26(0.19)	73	115
Friends Interested in Science / Math	3.02(0.61)	42	2.83(0.70)	72	114
Self-Efficacy					
Science / Math Self-Efficacy**	4.44(0.56)	43	3.98(0.72)	73	116
Science Knowledge Confidence	3.69(0.96)	43	3.35(0.94)	72	115
Outcome Expectations					
Science Course Expectations**	5.69(0.71)	41	4.80(1.75)	72	113
Scientific Career Expectancies	2.08(0.25)	42	2.02(0.38)	73	115
Interests					
Scientific Interests*	4.23(0.87)	43	3.88(0.82)	72	115
Extracurricular Scientific Interests**	2.53(0.87)	43	3.88(0.82)	72	115

[1] All n based on valid cases for analyses.
[2] sd = standard deviation; figures for experiential factors are also means and standard deviations.
* Difference between Science Career (Yes/No) significant at P<.05.
** Difference between Science Career (Yes/No) significant at P<.01.

Table 2

Participants who remained with original science career choice and changed science career choice to non-science career choice between the original NYSP study and the Follow-up study by gender and grade level (senior, intermediate and junior high school).

Actual career choice in the follow-up study				
Gender Grade level Career Choice in NYSP	Total N	Remain with the original choice, % (n)	Change in the career choice, % (n)	Reasons for changing
MALE	**53**			
Senior	10			
Science	3	33.3 (1)	67.7 (2)	Change in interest
Non Science	7	57.1 (4)	42.9 (3)	
Intermediate	16			
Science	7	71.4 (5)	28.6 (2)	Don't remember the original choice
Non Science	9	44.4 (4)	55.6 (5)	
Junior	27			
Science	12	66.67 (8)	33.33 (4)	Too difficult; too much school; don't remember the original choice.
Non Science	15	80.00 (12)	20.00 (3)	
FEMALE	**63**			
Senior	6			
Science	2	100.0 (2)	0.00 (0)	
Non Science	4	75.00 (3)	25.00 (1)	
Intermediate	30			
Science	18	38.89 (7)	61.11 (11)	Change in interest; too difficult; co-op placement influenced the change; work experience influenced the change.
Non Science	12	83.33 (10)	16.67 (2)	
Junior	27			
Science	12	50.00 (6)	50.00 (6)	Change in interest; teacher influenced the change; personal reason.
Non Science	15	86.70 (13)	13.30 (2)	
OVERALL MALE	**53**			
Science	22	63.60 (14)	36.40 (8)	
Non Science	31	64.50 (20)	35.50 (11)	
OVERALL FEMALE	**63**			
Science	32	40.60 (13)	59.40 (19)	
Non Science	31	83.90 (26)	16.10 (5)	

ence/math self-efficacy, science course expectations, scientific interests, and extracurricular scientific interests (see Table 1). There were several significant relationships among the predictor variables. However, the magnitude of the correlations (-.01 to .577) was not sufficiently high as to pose problems with multicolinearity.

Cross tabs for stability of career choice between the originally proposed field of study (science/non-science) and the actual field of study (science/non-science) at follow-up are presented in Table 2. There was a significant difference between males and females in stability of career choice. Approximately 64% (14) of males, while only 41% (13) of females, remained with their original science career choice. The most salient reasons cited by both males and females for moving away from a science career were "change in interest" and "influence of work placement". Participants also noted "difficulty of science and math courses" as a reason for making this change. Statistically significant differences were found between those who remained with science field after five years and those who switched to a non-science field, on two factors reflecting outcome expectations (t_{65} =2.102, p< .05) and interest in science and math. Additionally, regarding career choice changes from non-science to a science, 36% (8) of males and only 20% (3) of females changed from an original non-science career choice to a science career choice. Similar patterns of results were found for participants who were at the intermediate and junior high school level in the original study, but unfortunately there were not enough subjects to establish a pattern for participants who were originally at the senior high school level.

A sequential logistic regression analysis was carried out to explore the

contribution of contextual and experiential factors as presented in figure 1 to the prediction of science career choice (yes/no), five years after the original data collection. Table 3 shows the multivariate odds ratio (OR) and 95% confidence intervals for the predictor variables within each pathway (model) shown in figure 1, and the significance and percentage of variance explained by the series of regression models. An alpha level of .05 (one-tailed) was used to test the significance.

Results of the pathway comprised of person input variables (Model 1,figure 1) indicated that gender was positively associated with the likelihood of a scientific career. The results showed that approximately 40% more males chose science careers than females. Intermediate grade level students had 27% higher probability of choosing a science career as compared to junior students, however this difference was not significant. Although the overall person input factor was not found significant, it contributed six percent of the variance in discriminating science (yes/no) career choice (Negelkerke R square = .06).

The addition of the background/context set of measures (Model 2, figure 1) did not significantly contribute to the prediction of career choice beyond what was accounted for by person input, however, these measures explained six percent of the variance in discriminating science career choice (Negelkerke R square = .12).

Learning experiences (Model 3,figure1) contributed significantly (block χ^2 = 23.48, DF = 3, Negelkerke R square = .40) when added to the model. Results showed that students who pursued scientific careers tended to have higher science/math grades and more friends interested in science compared to students who opted for non-science careers. Learning experiences contributed 28% of the variance to the model over and above what was contributed by person input and background/context factors.

Results of science and math self-efficacy (model 4, figure1) showed a direct positive effect on career goals after controlling for the factors reflecting person input, background/context, and learning experiences. It explained 3% of the variance. Intermediate grade level and family cohesiveness indirectly affected science/math self-efficacy via person input, background/context and learning experiences.

Outcome expectations, more specifically students' science course expectations, (Model 5, figure 5) directly added to the model. Students with scientific career goals were more likely to have confidence in their scientific ability and to expect their courses to be useful in their future career than students with non-science goals. It explained 5% of the variance.

The results indicated positive effect of both interest measures (model 6, figure1), however they were not found to be significant after controlling for person input, background/context, learning experiences, self-efficacy, and outcome expectations. Models 4, 5, and 6 together contributed 11% of the variance to the model of career choice. Learning experiences had the most influence on the career choice model. It explained 28% of the variance and directly and indirectly affected career choice though self-efficacy, outcome expectations and interests.

The correct classification rates, based on all the predictors, were 65.7% for participants who chose science careers, 86.7% for participants who chose non-science careers, and 78.7% overall.

Discussion

The present longitudinal study tracked changes in science/math career choice development for Canadian ado-

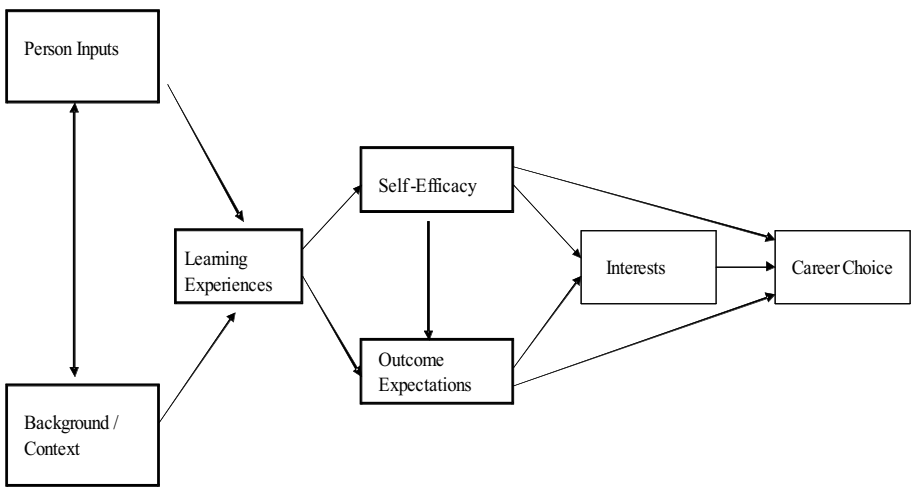

Figure 1: Partial version of the Lent et al. (1994) social-cognitive model of career development.

Table 3

Multivariate odds ratios (OR) and 95% confidence intervals (CI's) for the logistic regression of science career choice on person input factors, background factors, scientific learning experiences, science/math self-efficacy, outcome expectations, and scientific interests (Follow-up Study, N=116).[1,2]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Person Input						
Gender						
Male	**2.31 (0.95-5.59)** †	1.97 (0.77-5.05)	1.90 (0.67-5.42)	1.58 (.52-4.87)	1.75 (0.54-5.66)	1.69 (0.47-6.15)
Female	ref.	ref.	ref.	ref.	ref.	ref.
Grade						
Senior (12+)	0.71 (0.18-2.80)	0.78 (0.18-3.39)	2.41 (.35-16.85)	2.24 (0.30-16.62)	3.42 (0.38-30.47)	4.90 (0.49-49.46)
Intermediate (10-11)	1.27 (0.49-3.29)	1.56 (0.54-4.49)	2.77 (0.79-9.70)	**3.14 (0.85-11.61)**	**4.25 (0.98-18.47)**	**6.3 (1.17-32.13)**
Junior (8-9)	ref.	ref.	ref.	ref.	ref.	ref.
Language						
English	1.22 (0.42-3.55)	1.78 (0.47-6.81)	3.32 (0.68-16.12)	3.32 (0.66-16.66)	2.93 (0.54-15.86)	3.40 (0.57-20.27)
French	ref.	ref.	ref.	ref.	ref.	ref.
Background/Context						
Parent SES		1.02 (0.99-1.05)†	1.02 (0.99-1.06)	1.02 (0.99-1.06)	1.03 (0.99-1.07)	**1.04 (0.99-1.07)**
Family Cohesiveness		1.53 (0.78-2.93)	2.01 (0.88-4.158)	**2.14 (0.90-5.10)**	2.06 (0.86-4.89)	2.00 (0.81-4.83)
Family Communication		0.96 (0.57-1.60)	0.78 (0.44-1.40)	0.74 (0.41-1.33)	0.65 (0.34-1.23)	**0.51 (0.23-1.09)**
Family Career Encouragement		0.80 (0.47-1.36)	0.68 (0.35-1.31)	0.66 (0.34-1.29)	0.76 (0.38-1.50)	0.68 (0.33-1.41)
Science Encourage/Expectations		0.97 (0.48-1.94)	0.80 (0.35-1.80)	0.60 (0.31-1.55)	0.68 (0.24-1.94)	0.74 (0.25-2.22)
Learning Experiences						
Science/Math Grades			**4.37 (1.29-14.78)**†	**2.82 (0.88-9.08)**	3.30 (0.77-14.17)	**3.90 (0.81-18.78)**
Percept. of Science/ Math Teachers			0.11 (0.01-1.48)	**0.06 (0.00-0.95)**	**0.04 (0.00-0.82)**	**0.05 (0.01-1.34)**
Friends Interested in Science/Math			**2.14 (.89-5.15)**	**2.18 (0.88-11.94)**	2.18 (0.81-5.74)	2.04 (0.75-5.60)
Self-Efficacy						
Science/Math Self-Efficacy				**3.27 (0.90-11.94)²**	**3.38 (0.84-13.58)**	3.04 (0.74-12.42)
Science Knowledge Confidence				0.86 (0.45-1.62)	0.88 (0.45--1.69)	0.85 (0.43-1.68-)
Outcome Expectations						
Science Course Expectations					**2.87 (0.96-8.62)**†	**2.58 (0.90-7.39)**
Scientific Career Expectancies					0.56 (0.14-2.18)	0.40 (0.09-1.74)
Interests						
Scientific Interests						1.34 (0.61-2.94)
Extracurricular Scientific Interests						2.13 (0.68-6.67)†
Constant	-1.19	-3.38	-11.98	-15.58	-15.58	-17.31
-2 Log Likelihood	119.18	114.39	90.911	87.43	82.44	79.61
Model Chi-Square [df]	3.85 (4)	8.63 (9)	32.12 (12) **	35.59 (14) **	40.59 (16) **	43.42 (18) **
Block Chi-Square [df]	3.85 (4)	4.79 (5)	23.48 (3) **	3.48 (2)	4.50 (2) ‡	2.83 (2) ‡
Negelkerke R Square	0.06	0.12	0.40	0.43	0.48	0.51

[1] 95% confidence intervals (CI) in parentheses; significant terms are in bold.
[2] Variable significance was tested by Wald distributed chi-square statistics with 1 degree of freedom (the exception was grade-level, with 2df).

Note: (1) *p < .01; **p < .001.
(2) When each category of variables tested individually † P< .05, ‡ P< .01.
P< .05 when a model category tested individually

Table 4

The reasons for changing science career choice to non-science career choice between the original NYSP study and the Follow-up study by gender.

Reasons for changing science career choice to non-science career	Male		Female	
	%	n	%	n
Change in interest	25	2	31.59	6
Find too difficult	12.5	1	5.26	1
Co-op placement			5.26	1
Work experience			21.05	4
Too much school	12.5	1	5.26	1
Do not remember the original choice	50	4	10.53	2
Missing			21.05	4
Total	100	8	100	19

lescents over a five-year span and examined the impact of contextual and experiential factors on their later career choices. It responded to the frequent and longstanding calls from researchers in the field of social cognitive career choice development for longitudinal studies. Relatively few studies have looked at social cognitive career development over time, and no studies were found that tracked changes in science/math career choice development from high school into post secondary education or the work force while also considering the impact of young people's environments and experiences on their career choices.

The findings of the current study provide evidence regarding the stability of science career choice five years after the original data collection, gender differences in stability of science career choice, and the congruence of the findings from the current longitudinal study with those from the cross sectional study conducted by Urajnik, et al. (2007).

Results regarding the stability of career choice five years after the original data collection showed that approximately 50% of students shifted from pursuing a science career to pursuing another field of study or work. A good deal of change in young people's actual career choices over time has also been found by previous researchers (e.g., Athanasou, 2002; Tracey & Robbins, 2005; Tracey et al., 2005). In their studies of college-bound high school students, Tracey and his colleagues (Tracey & Robbins, 2005; Tracey et al., 2005) found that while the students' interest levels remained stable over the four years of high school, there was a drop in clarity about their career choice and interest-career choice congruence in the senior year. Consequently, it was suggested that the senior year of high school may be an important time to explore career choice development. In an Australian study of stability versus instability of young people's early career pathways, Athanasou (2002) found that only 21% of participants remained in their original vocational category after seven years. He argued that, "it is remarkable that there is any stability in careers given the myriad of potential influences likely to destabilize any life" (p. 84). In fact, there is consensus among virtually all researchers in the field that career choice development takes place within a psychosocial context, influenced by many social networks (peer, family, school, community, etc.). Young people navigate input from many "significant others" in their lives as they go through their school to work transition; making career choices, developing occupational skills, and adjusting to work experiences. Thus, it may not be surprising that half of all students in this study were drawn away from their original career choice. Barriers, both intrapersonal (such as low self-esteem) and environmental (such as disapproval of family members) can hinder career progress (Lent & Hackett, 2000). In a qualitative study investigating college students' career choice supports and barriers, Lent et al. (2002) identified financial constraints, negative family/social influences, and role conflict as important contextual factors, and adjustment difficulties and ability limitations as key personal factors. Coping efficacy (confidence in being able to cope with career barriers and make clear decisions) has been studied as a significant factor in students' successfully overcoming barriers (Lent et al., 2000; Creed et al., 2006; Earl & Bright, 2007). Earl and Bright (2007) suggested that with today's "boundary-less careers", being too fixed about a career choice may be an impediment in itself. The students in the present study (both males and females) said they had moved away from a science career mostly because of a change in interest, difficulty of science and math courses, and/or influence of work placement. Further investigation to examine the underlying processes accounting for these reasons would be useful.

The present study showed similar patterns of change for junior and intermediate level high school students; unfortunately, the sample of senior level students was too small to establish a pattern of results for this subgroup. Thus it is not possible to ascertain whether the participation of more senior level students in the study might have increased the percentages of students actually staying with their science/math career choice.

Although a good deal of change may be inevitable, the question remains as to why this effect is more prominent for young women. Results of the study indicated a significant difference between males and females in stability of career choice, with approximately 64% of males, and only 41 % of females, staying with their original science career choice. Regression analysis in the study found that gender was significantly associated with the likelihood of a scientific career choice. Forty percent more

males than females had science career goals. And, significantly more young women gave up their original science career choice. The phenomenon that females are underrepresented in the science/math field has been a concern for researchers in the past (Lapan et al., 1996; Gandalla, 2001; Haines & Wallace, 2002; Wai-Ling Packard, & Nguyen, 2003). In a study exploring whether gender socialization, roles, and stereotypes affect the relationship between gender and majoring in science, Haines and Wallace (2002) found that being female reduces the likelihood of pursuing a science career. They suggested that this is because being female is associated with less high school science and math preparation, which is necessary for pursuing science at university. Lapan et al. (1996) had previously found that young women take fewer math courses in high school, show less ability, believe less in their math/science ability, and consequently express less interest in math/science vocational interest than young men. Trusty and Ng (2000) found that perceived mathematics achievement had stronger effects on career choice for men than for women.

Wai-Ling Packard and Nguyen (2003) used a qualitative approach to gain understanding about how young women proceed with their career decisions over time. They found that young women tend to move through their career decision making process by utilizing mentoring relationships and job internships. These experiences allowed young women to imagine their future "possible selves" through role-playing and "trying-on" careers. The authors of the study stressed the importance of mentors and internship programs for young women to ensure that career goals are not discarded because of a lack of information or stereotypical perceptions. Also from a qualitative approach, Whitmarsh, Brown, Cooper, Hawkins-Rodgers, and Wentworth (2007) found that women who venture into non-traditional roles (such as math/science careers) receive their support and mentoring from outside their families (from college classmates, professors, professional mentors, and bosses, for example), and often suspend making their final choice until later in their career development. Additionally, they found that women often change their career goals to enable them to deal better with marriage and family responsibilities. Accordingly, school and workplace mentoring relationships are important to help young women make their choice to pursue a math/science career and balance any real or perceived obstacles that can keep them from doing so. In the present study, work placement was given as a prominent reason for making a career goal change. It would be interesting to know whether mentoring relationships were available to them in their work placement experience.

In the present study, model three of the regression analysis revealed that measures of learning experiences (perceived science/math grades and friends' interest in science/math) contributed significantly to science career choice. Students with higher perceived science/math grades and more friends interested in science were more likely to choose math/science careers. In fact, learning experiences had the most influence on the career choice model, as it explained 28% of the variance in career choice, and directly and indirectly affected career choice through self-efficacy, outcome expectations and interests. Jackson, Potere, and Brobst (2006) also found a significant association between participants' success learning experience and their expressed occupational interests and a positive association between their career self-efficacy beliefs and inventoried occupational interests. Concurring that science/math ability is an important factor in girls' career choice development, in a longitudinal study of high school girls' choices to pursue science/math/engineering (SME) majors in college, Nauta and Epperson (2003) found that high school math/science ability was positively related to SME self-efficacy, which was in turn related to making a choice to pursue a science career. Over time, this was related to higher SME self-efficacy and more positive SME outcome expectations in college. Thus, doing well in high school math and science helped girls to make a choice to pursue science and to stay with it. Studying the school to work transition of teenagers, Pinquart et al. (2003) found that youth with high academic self-efficacy beliefs and better grades were less likely to become unemployed and more likely to be satisfied with their work at age 21. In the present study, students cited difficulty in science/math courses as a reason for changing their goals. Model four of the regression analysis showed that math/science self-efficacy had a direct positive effect on career goals. This essentially means that students with lower math/science confidence may move away from a math/science career choice they had made earlier. Additionally, model five of the regression analysis showed that science course expectations added directly to the model. Students who chose science/math careers were more likely to expect their science courses to be useful. Inversely, those who did not chose science courses were less likely to see the relevance of their science/math courses. Students who moved away from a science career goal, then, may have become unconvinced that their science/math courses were constructive. Thus, early interventions which, first, help students, and particularly girls, realize the importance and usefulness of taking math and science in high school and, second, help them through any difficulties they encounter may assist them to feel empowered to handle future challenges; such interventions therefore could be vital to supporting them as they endeavor to realize their goals.

In comparing the results of the cross-sectional study (Urajnik et al., 2007) and the present longitudinal study on the utility of the Lent et al. (1994) social cognitive model of career choice, both studies tend to support the model. Results of both studies indicated that gender, scientific learning experiences, science self efficacy measures, outcome expectancies, and scientific interests contributed significant variance to the prediction of scientific choice. However, the effects of the constructs in the model (scientific learning experiences, science self-efficacy measures, outcome expectancies, and scientific interests) are much stronger in the longitudinal study than in a cross-sectional study. More specifically, 9% of the variance in scientific career aspirations in the cross-sectional study was accounted by the above four construct where as in the longitudinal study, 39% of the variance

in scientific career was explained by the same construct. Learning experience explained the most variance (28%).

In conclusion, given the paucity of longitudinal studies investigating science career choice development, this study gives some intriguing indications of what a larger study might find and should therefore investigate. We would especially recommend the inclusion of a larger number of high school seniors. The results of the present study showed a great deal of change away from students' originally stated career choices. Taken together, 50% of students shifted from pursuing a science career to pursuing another field of study or work. Also, young women were significantly more likely to give up their original science choice (59% changed) than young men (36% changed). Major reasons given by both males and females for moving away from a science career were change in interest, difficulty of science and math courses, and influence of work placement. More can be learned about the underlying reasons. The regression analyses showed that learning experiences (perceived math/science ability and friends' interest in science) had the most influence on later career choice, as it explained 28% of the variance in career choice, and directly and indirectly affected it through self-efficacy, outcome expectations and interests. This result points to the importance of future consideration of learning experiences, such as achievement perceptions, and their effect on aspects of self-efficacy. Ultimately, more extensive and in depth inquiry into students' career choice process is important. Why are so many students, especially young women, abandoning their original science career choices? What is influencing them to do so? What can help them move confidently through the transition from school to work? The contributions of qualitative research (e.g., Wai-Ling Packard & Nguyen, 2003; Whitmarsh et al., 2007) seem particularly useful in gaining a deeper understanding about the subtleties of these issues. Future longitudinal inquiries, then, may benefit from a mixed-methods design, including participants' qualitative views and insights into the inevitable ebbs and flows of their career development process.

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Organizational and Individual Determinants of Atypical Employment: the Case of Multiple Jobholding and Self-employment in Canada

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Abstract

The growing need for organizational flexibility has prompted increasing recourse to atypical work. Multiple jobholding and self-employment are atypical work forms that have particularly intrigued researchers. Using data compiled by Statistics Canada, we have identified factors that influence the probability of belonging to these two categories of atypical employment. Our results suggest that the influence factors are not identical for the two non-standard job categories studied. Sector of activity, gender and the absence of promotion considerably affect the probability of joining the ranks of the self-employed, whereas professional category and frequency of movement significantly influence the probability of belonging to the multiple jobholder group. The populations engaging in these two forms of atypical work are not homogeneous.

Introduction

For several years, organizations have been rocked by profound structural changes, compounded by the advent of management philosophies that have impacted work organization and the nature of the job market. Central to the structural modifications that are radically transforming organizations is a generalized and constant goal: to enhance organizational flexibility (Keller & Seifert, 2005; Atkinson, 1984; Chênevert and Tremblay, 1995). There is every indication that this quest for flexibility and the growth of different forms of atypical employment in the workforce are two indissociable phenomena. Issues related to commitment are necessary components of analyses of atypical employment, given that the use of non-standard workers heightens autonomy, independence and distance between individuals and organizations (Torka, 2004; Payette, 1998). Forms of atypical employment such as self-employment considerably transform the aspects of control because in these cases control is manifested largely by the attainment of objectives and results included in a global mandate. Organizational control is thus limited to products, not processes, and human resource management can be compared to a client/supplier process.

As various forms of atypical employment gain ground, the consolidation of contingent work strengthens the thesis of the constantly decreasing core workforce (Ogoshi, 2006; Booth, 1997; Macbride-King, 1997). There is a consensus that these forms of employment are constantly growing within the Canadian labor force, and even more extensively in Europe and North America as a whole (Buschoff and Protsch, 2008; Booth, 1997; Hipple, 2001; Krahn, 1991, 1995). Some authors argue that by increasingly targeting external flexibility, organizations are partially relieving themselves of the responsibility of career management (Brousseau et al., 1996; Hall, 1996). The predominance of management practices oriented toward increasing organizational flexibility and consolidating non-standard employment thus directly contributes to accelerating the evolution of the traditional career paradigm.

Organizational career management conventionally implied the existence of professional mobility channels that enabled individuals to ascend through a series of positions and functions, along with an identification system of potential candidates and management mechanisms that support and direct individuals (Smith & Sheridan, 2006; Caudron, 1994). In this career management system, individuals would spend little time organizing their career paths because they followed fairly standardized models that corresponded to criteria such as qualification, age, stage and seniority. These career models evolved within social and organizational environments that were relatively stable and predictable, which represents a stark contrast with new careers, whose development and consolidation unfold in unstable, constantly changing organizational settings. As a result, the representation of the traditional career no longer constitutes a universal reference paradigm, even if several "nostalgic" scholars continue to cling to universality and desperately wish the paradigm to hold true. The multiple jobholding and self-employment forms of atypical work deserve particular attention owing to their substantial, continuous and rapid growth (Edwards & Hendrey, 1996; Kranh, 1995).

The research question that underlies our analysis is as follows: what are the organizational and individual determinants that increase the probability that a standard worker will join the ranks of multiple-jobholders and self-employed workers. Our hypotheses examine the probability of a standard worker's engaging in one of these two forms of atypical employment. To our knowledge, most studies on this topic are limited to descriptive analyses whose main objective is to identify the individual characteristics of atypical workers (Akyeampong, 1997; Kranh, 1995; Webber, 1989). Apart from Carr's (1996) study of self-employment determinants, few scholars have seriously attempted to predict the use of specific forms of atypical employment, and none have conducted this type of analysis

with respect to both multiple jobholding and self-employment in the Canadian labor force; these analytical goals are the principal objectives of this article.

1 Determinants of atypical employment

Most studies of internalization and externalization of work are grounded in the theory of market duality proposed by Doeringer and Piore (1971). This theory states that internalization of work, generally discussed in the context of the internal job market, enhances the stability of labor while enabling an organization to better control its employees. In addition, in an organization that has a hierarchical structure that favors mobility between jobs, the internal market provides employees with the necessary competency and career development opportunities to ensure organizational loyalty. Nonetheless, because this approach encourages stability and control, it is costly and sometimes inefficient to implement for companies that operate in an unstable and turbulent environment (Davis-Blake & Uzzi, 1993).

In contrast, externalization of work enhances organizational flexibility, making it easier for companies to weather changing market conditions and respond rapidly to organizational requirements. Externalization of work enables an organization to adjust its personnel to changing market requirements and thus reduce administrative and labor costs. Companies can also terminate a position without tarnishing their corporate image; additionally, they acquire easy access to specialized resources, without having to offer long-term commitment in exchange (Belous, 1989; Matusik & Hill, 1998). Externalization of work is thus a strategy that directly contributes to the emergence and consolidation of what have been labeled "boundaryless careers."

Unlike the traditional career paths that are generally characterized by a linear and sequential trajectory within the same organization, boundaryless careers entail individual paths that exceed the frontiers of the traditional job status. Such paths are associated with new forms of careers that atypical job growth generates strongly. Whereas job market conditions propel individuals toward this type of career, the recent literature specifies that many people will opt for a boundaryless career owing to the exchange value of their human capital or because of their experience on the job market. An additional motivator is that this type of career furthers the development of workers' expertise through contact with several companies instead of only one (Marler et al., 1998), a situation that certainly applies to a large proportion of the worker population.

As Davis-Blake and Uzzi (1993) observed, the factors that influence internalization of work are identical to those that induce externalization of work. The analytical model that we have adopted places particular emphasis on the factors specifically linked to organizational characteristics (e.g. sector of activity, unionization), job and career attributes (e.g. type of job, promotions, mobility) and individual characteristics (e.g. gender).

1.1 Organizational characteristics

Sector of activity

Some sectors of activity have been traditionally identified as being atypical-labour intensive owing to their strong propensity to promote externalization of work. For example, the construction sector and the services sector endorse a staffing strategy that is oriented toward the use of atypical jobs, more specifically self-employed workers and multiple jobholding, arising from the seasonal nature of their activities or the customer service requirements (Bregger, 1996; Hipple, 2001). In contrast, sectors such as the public sector have a low historical rate of recourse to atypical jobs. This phenomenon has been attributed to the government's need to demonstrate its social responsibility and attitude of good corporate citizenship (Davis-Blake & Uzzi, 1993). Nonetheless, it is difficult to clearly identify the precise influence of a sector of activity on the probability of adopting a specific atypical job form.

Unionization

Studies of the relation between unionization and atypical jobs have not consistently yielded conclusive results (Bielmann et al., 1999; Davis-Blake & Uzzi, 1993). Nonetheless, it has been shown that to avoid the union influence, some organizations attempt to externalize work so as to maximize the use of human resources outside of union control. Nevertheless, recent studies conducted in the United States report that only 5.9% of atypical employees are unionized, versus 14.8% of full-time employees (Hipple, 2001). In addition, unions are historically opposed to externalization of work and often oblige employers to use this practice sparingly by emphasizing the need to increase stability and job security in order to create an atmosphere conducive to collective bargaining (Davis-Blake & Uzzi, 1993).

1.2 Job and career attributes

As mentioned above, the literature demonstrates that the search for flexibility extends to central activities that are non-critical for organizations. As a result, atypical work is not limited to low-skilled jobs and poorly qualified occupational categories (Caudron, 1994; Hipple, 2001; Matusik & Hill, 1998); in consequence, all occupational categories should be equally affected. The specialized literature reveals that many self-employed individuals are highly educated, which implies that they hold skilled occupations (Carr, 1996; Meyer & Bruce, 1996).

For at least the past decade, many career analysts have studied issues that directly call into question the traditional notion of the career. The classic view has since been overturned, a phenomenon that is even more evident in a context of generalized atypical employment. Given that the scarcity of hierarchical movement is manifested as one of the characteristics of the generalization of plateauing of traditional careers, and also as a net trend toward the systematic use of non-standard employment, the absence of promotions substantially increases the probability of being an atypical worker (Marler & Milkovich, 2000; Simard, 2000). In 1994 atypical Canadian workers were more likely to be in careers with non-ascending movement than standard workers, although this factor did not considerably influence the probability of being an atypical worker (Carr, 1996; Simard, 2000).

1.3 Individual Characteristics

Several individual variables may also influence the probability of being self-employed or holding multiple jobs. Gender, education and age are notable examples. Whereas the overall effect of these variables is inconsistent, gender is an exception: the specialized literature suggests that for several reasons women are more present than men in atypical jobs examined as a whole.

We have grouped some of the most frequent explanations into two broad categories. First, a more self-determined explanation for the higher presence of self-employed women is personal choice. These workers are motivated by the search for greater flexibility, given the presumed effects of this flexibility on the reduction of conflict related to the work/family balance (Hipple, 2001; Jurik, 1998; Marler & Milkovich, 2000).

In contrast, in a perspective dominated by a more Schumpeterian approach to structural constraints, self-employment corresponds to a response to unemployment or a refuge for aging workers. Carr (1996) established that men and women have different motivations for seeking self-employment, but that overall these motivations originate from constraints on career choices. However, from a strictly factual standpoint, men far outnumber women among self-employed workers, a trend that has been identified in American studies (Matthews & Moser, 1995).

Lastly, our previous research has found that Canadian multiple jobholders do not form a very homogeneous group (Simard, 1997). The same finding applies to self-employed workers (Carr, 1996; Jurik, 1998; Marler & Milkovich, 2000). These forms of atypical jobs are associated with unequal individual characteristics, conditions and living opportunities for the same type of workers (Carr, 1996; Hipple, 2001).

2 Research methodology

To attain our research objectives, we used secondary data produced by Statistics Canada, namely the microdata file of the General Social Survey (GSS). In this article, we examine respondents in Section H, i.e. individuals in the labor force at the time of the survey (which excludes retired people but not active people age 65 and over). The sample therefore comprises 6,365 cases. Note that two samples are analyzed: 808 individuals for regression of multiple jobholders and 1,204 for self-employed workers.[2]

2.1 Operational definition of variables

Dependent variables

The dependent variables are dichotomous, and correspond to the job status of respondents–-multiple jobholder or self-employed. Multiple jobholding is covered directly in question H1, which asks the respondent whether they held more than one job in the week preceding the survey. Self-employment is a constructed variable that encompasses individuals who claim to be self-employed professionals in question H13, and those who consider themselves self-employed workers in question H8, and who have no employees, i.e. the reply to question H9. This transformation and control are necessary to avoid counting respondents that fall into more than one variable more than once. In addition, if a self-employed worker has employees, he/she is considered an employer rather than a non-standard worker.

Independent variables

We will now describe the seven independent variables integrated in the two logistic regression equations. First, there are two organizational characteristics: the sector of activity in which the respondents primarily situate their work activity in the past five years, and whether the respondents held a unionized job five years ago. The latter variable is dichotomous, and is listed in raw form in the database. For the sector of activity, we have recorded the original Statistics Canada variable constructed based on an open question. This variable includes 18 sectors of activity, whereas the variable we used encompasses the primary sector, the manufacturing sector and the commerce sector.

Job and career attributes are the focus of questions that determine the occupational category held five years ago, along with the number of job changes without vertical mobility and promotions in the past five years. The occupational category held five years ago is determined by an open question coded according to the 16-category Pinéo scale. We have recoded this variable in six categories by grouping professionals in the first category, managers in the second, supervisors and foremen in the third, vendors in the fourth, manual labourers in the fifth and farmers/farm workers in the sixth.

The number of movements in the past five years is obtained from a question that asks the respondent to indicate the number of different jobs held, specifically the holding of different positions within the same company or another company. The sum of these two variables provides the basis for the variable used in this study. Variance is low after six jobs, and we have grouped respondents into seven categories: from one to seven and up. The number of promotions is evaluated by an open question. Similar to the number of jobs, we have grouped respondents into five categories: none, one, two, three/four and five and up. Lastly, for individual variables, we use gender (1=female; 2=male) and age. This variable is produced based on a metric variable, and includes five categories: 18-29, 30-44, 45-59, 60-64, and 65 and +.

In the bi-variate analyses used to describe the families of multiple jobholders and self-employed workers, we also use the number of hours worked per week, annual income and the highest level of education attained. The duration of the work week is obtained by an open question that yields a metric variable that we have used as such. The respondents' annual income is recorded by the same type of variable and is used in raw state, whereas the level of education is measured by an ordinal 12-category scale, with the lowest category corresponding to no education. The variable has five categories: graduate studies, certificate, undergraduate studies, college studies and the equivalent of a Secondary V (Grade 11) diploma or less.

2.2 Methods of analysis

To adequately answer the questions raised by the literature, logistic regres-

sion analysis and various bi-variate analyses have been used. For logistic regression, we used the ENTER method to force all variables into the equation. The four category variables (sector of activity, number of movements, number of promotions and occupational category) are integrated in the regression model using the deviation technique. This technique allows generation of coefficients expressing the differing impact of each of the categories of the variable in relation to the general effect of the variable. The three other variables are dichotomous, and are integrated in the model using the "indicator" technique, which allows selection of the category of the variable included in the constant. The logistic regression analysis initially evaluates the validity of the global model, i.e. the model's capacity to reproduce original data at a level of significance of $\alpha = 0.05$. In this case, the null hypothesis that expresses the similarity of the global model to the model that contains the constant only must be accepted. Whereas the results of the classification table have been used by some scholars, this statistic is not reliable, as it is largely descriptive (Hosmer & Lemeshow, 1989). The chi-square statistic, which clarifies the significant character of the variation of -2 log likelihood, may be used. To identify the variables that influence the probability of becoming a multiple jobholder or self-employed worker, we use Wald's statistic to evaluate the importance of the contribution of a variable or variable category. To tease out the individual effect of the significant variables, the impact of each variable is translated into a net variation (percentage) of the base probability.[3]

To isolate the families within each of the atypical forms of employment selected, we performed a cluster analysis with the annual income and duration of the work week variables. The groups produced in these analyses will be used as independent variables in bi-variate analyses to produce the descriptive results.

3 Results

The General Social Survey indicated that 7.2 % of the respondents were holding multiple jobs. Self-employed workers represented 11.6% of the GSS, a result that is comparable with corresponding American data (Edwards & Hendrey, 1996; Segal, 1996).

The logistic regression analysis shows that the validity of the global model is significant because the value of the chi-square of Goodness of fit is 482.245— the critical distribution of chi-squares with 27 degrees of freedom is 55.47 — $p = 0.000$ — for the model relating to self-employment, whereas the statistics for multiple jobholders are 113.765 for the chi-square. The global model is significant because overall the coefficients are different from zero ($p = 0.000$). The two models thus generate valid predictions of the probability of being a multiple jobholder or self-employed worker. Nonetheless, the predictive capacity of the two models is not identical. The statistic of Cox and Snell, which provides a pseudo R^2, reveals that the model used for multiple jobholders explains only 13% (R^2=0.131) of the probability of the shift from standard work to multiple jobholding, whereas that of self-employment is markedly stronger (R^2=0.330).

Only three variables are excluded from the model used for multiple jobholding: age group, gender and union membership. Regarding self-employment, two variables are rejected: number of jobs in the past five years and age group.

3.1 Organizational characteristics

Table 1 presents the results of the logistic regression analyses performed

Table 1: Net variation in the probability of holding multiple jobs or being self-employed

Variables	Multiplication factor Exp (B)	Percentage points	Net variation in %
Self-employed			
Manufacturing sector	-0.8025	-19.5 %	-29.7 %
Construction	1.1498	20.1 %	30.6 %
Clerical and public service	-1.1977	-29.1 %	-44.2 %
Personnel	1.2067	20.8 %	31.6 %
Finance, insurance, real estate	0.5443	11.1 %	16.8 %
Management	1.0743	19.2 %	29.2 %
Education	-0.7278	-17.6 %	-26.9 %
Public administration	-2.9472	-56.6 %	-86.1 %
Senior and middle management	-0.5625	-13.5 %	-20.6 %
One promotion or more in past 5 years	-1.4303	-34.3 %	-52.2 %
No union membership in past 5 years	0.5194	10.6 %	16.1 %
Male	0.4487	9.3 %	14.2 %
Multiple jobholder			
Construction	0.5206	10.1 %	46.7 %
Finance, insurance, real estate	-0.6395	-8.9 %	-41.2 %
Professional and semi-professional	0.5790	11.4 %	52.6 %
Senior and middle management	-0.4941	-7.2 %	-33.4 %
4 jobs or more	0.5078	9.8 %	45.4 %
One promotion or more in past 5 years	-0.4820	-7.1 %	-32.7 %

for multiple jobholders and self-employed workers.

The **sector of activity** has a determining influence on the probability of being self-employed (Wald = 100.7830). This result differs substantially from that of multiple jobholders. Table 1 reveals that 8 out of 12 sectors of activity of the original variable have a significant effect on the probability of being a self-employed worker. Of these sectors, four produce a negative effect and the remaining four a positive effect.

The probability of being self-employed decreases by 86.1% for individuals that work in public administration, 44.2% in the communications and public services sector, 29.7% in the manufacturing sector and 26.9% in the education sector. In contrast, the personnel services sector increases this probability by 31.6%, construction 30.6%, management services 29.2% and finance, insurance and real estate 16.8%. Regarding multiple jobholding, the results show a weaker effect of sector of activity on this variable (Wald = 14.5669). Nonetheless, for individuals working in the construction sector, the probability of holding multiple jobs increases by 46.7%, whereas that of workers in finance, insurance and real estate decreases by 41.2%. In the latter case, the influence is strong but negative, which indicates that this sector does not use multiple jobholding; this does not imply, however, that all forms of atypical jobs are excluded.

Lastly, **unionization** exerts a mitigated influence on the probability of being self-employed, but not of holding multiple jobs, which is explained by the fact that multiple jobholders use atypical forms of employment that are generally unionized, such as part-time work. Therefore, holding a non-unionized job five years before the study increases the probability of being self-employed by 16.1%.

3.2 Job and career attributes

Regarding the influence of the occupational category held five years ago, Table 1 shows that 2 out of 7 categories of the original variable affect the probability of holding multiple jobs. The influence of this variable is comparable to that of the sector of activity (Wald = 15.2970). The two most influential categories are professionals and semi-professionals, and senior and middle managers. For the first group (respondents that held a professional or semi-professional position five years ago), the probability of holding multiple jobs increases by 52.6%, whereas it decreases by 33.4% for respondents that held a senior or middle manager position five years before the survey.

For self-employment, Table 1 illustrates that the influence of the professional category is fairly weak (Wald = 16.4104). Accordingly, 1 category out of 7 of the original variable affects the probability of self-employment. Note that respondents that were senior and middle managers five years earlier are 20.6% less likely to be self-employed. This result is consistent with that obtained for multiple jobholders, and indicates that this occupational category is affected by these atypical forms of employment, perhaps even by all types of non-standard work.

In addition, Table 1 reveals that some career elements have a marked influence on the probability of being in a multiple jobholding situation. This is notably and clearly the case with **frequency and direction of movement** in the five years preceding the study (Wald = 53.8196 and Wald = 41.1818). Respondents that experienced one or more promotions in the past five years were 32.7% less likely to hold multiple jobs and 52.2% less likely to be self-employed. Moreover, a very high frequency of non-hierarchical movement (over five jobs) increases the probability of holding multiple jobs by 45.4%. In contrast, frequency of movement in the past five years does not influence the probability of being self-employed.

3.3 Individual characteristics

Regarding self-employment, only one individual characteristic influences the probability of carrying on this form of atypical employment: the gender of the respondent. Accordingly, men have a 14.2% higher probability of being self-employed. As for multiple jobholding, no individual variable emerged from the logistic regression analysis, which implies that men and women have an equal probability of holding multiple jobs.

3.4 Multiple jobholding and self-employment: homogeneity or heterogeneity?

Table 2 shows that it is possible to isolate three broad families of multiple jobholders: a majority of insecure (51.7 %), followed by *consolidated* (40.7 %) and a minority of *stars* (7.6 %), who are characterized by very high income. The stars also report the longest work weeks, yet their results are similar to the *consolidated* family. In contrast, the *stars* clearly stand out from the *insecure* because of their considerably longer work weeks. When annual income is taken into consideration, *stars* are categorically differentiated from *insecure* and *consolidated* by a much higher average annual income. Table 2 shows that men and women are equally represented in the group of multiple jobholders. However, two out of three women fall into the *insecure* family, whereas, inversely, two thirds of the *star* family are men. *Stars* account for most of the university graduates that hold multiple jobs, whereas the insecure group comprises more individuals with a high school diploma or less.

Table 2 distinguishes three significantly different families among the self-employed. The first is made up of conquerors, who comprise 17% of the population, the second family, survivors, accounts for 36.7% and victims are the majority, at 46.4%. Similar to multiple jobholders, one family of self-employed workers clearly stands out from the others. Conquerors have an annual average income of $89,158, i.e. twice as high as that of survivors and five times higher than that of victims. In terms of education, conquerors encompass the majority of self-employed university graduates, whereas the victims family comprises more than half of respondents with high school diplomas or less. In contrast with multiple jobholders, men are over-represented in self-employment, at 61.6% of the population holding this type of atypical job. Moreover, men constitute the majority among the conquerors and the survivors. In terms of duration of work week, conquerors significantly stand out from the other two families because of their considerably longer average schedule.

4 Discussion

Overall, the results related to the effect of the sector of activity show that self-employment tends to span more sectors of activity than multiple jobholding. The fact that Canadian self-employed workers work in various sectors of activity clearly reveals the extent that this form of work has penetrated the job market. These results corroborate Matusik and Hill (1998), who describe the advantages of using atypical employment in some organizational environments, because this approach supports the creation of knowledge and competencies that organizations inevitably require. However, the results obtained confirm a trend toward polarization, or rejection of recourse to self-employment in certain sectors of activity, given that four of the sectors have a positive influence on the probability of holding this form of atypical job, while four other sectors have a negative effect. This finding therefore indicates resistance to generalization of externalization strategies. Apparently, some sectors of activity refuse to use self-employment, i.e. this employment link is not part of their organizational reality, whereas other sectors rely on it considerably. There is notable underrepresentation of self-employment in sectors traditionally related to government activities, which have never opted for this type of employment (Hipple, 2001). In this respect, our results confirm the conclusions found in the specialized literature (Jurik, 1998; Matusik & Hill, 1998). Nonetheless, the case of the manufacturing sector is somewhat surprising. Although the manufacturing sector has always concentrated human resources and means of production, one would expect, as Matusik and Hill (1998) suggest, that organizations in this sector would opt for the use of atypical employment, especially given that a number of self-employed workers would presumably agree to work as subcontractors, under service contracts, in premises and with equipment situated outside of the organization.

Further, self-employment can easily expand in the manufacturing sector because, like real estate, the form and organization of work lends itself well to this type of employment. In contrast, the construction sector has a positive effect on both self-employed workers and multiple jobholders. This sector should therefore be considered to place particular value on strategies based on external flexibility, together with fewer employee commitments and employment costs (Tremblay, D.G, 1990). Because the construction sector produces a significant effect for both types of atypical jobs analyzed, our results partially support the conclusions of other studies on the subject (Bregger, 1996). This is hardly surprising because this sector is characterized by frequent fluctuations in activity that oblige organizations and in-

Table 2: Families of multiple jobholders and self-employed workers

	Multiple jobholders				Self-employed			
	Insecure	Consolidated	Stars	ref. %.	Victims	Survivors	Conquerors	ref. %.
Hrs. work/week	41	52	55**		37	47	54**	
Level of education								
Graduate Studies	2.3%**	6.7%**	32.0%**	6.3%	1.7%**	4.4%**	15.9%**	5.1%
Bachelor	13.1%**	21.5%**	36.0%**	18.2%	1.7%**	21.3%**	49.2%**	21.3%
Univ. certificate	1.7%**	5.2%**	8.0%**	3.6%	11.0%**	3.7%**	3.2%**	2.7%
College	26.9%**	34.1%**	12.0%**	28.7%	32.0%**	26.5%**	12.7%**	26.7%
High school or less	56.0%**	12.0%**	12.0%**	43.3%	53.5%**	44.1%**	19.0%**	44.2%
	100%	100%	100%	100%	100%	100%	100%	100%
Av. annual income	$21,092	$45,414	$86,987**		$17,665	$45,952	$89,158**	
Gender (Male)	36.6%	60.4%	64.0%**	48.1%	40.1%	75.7%	77.8%**	59.6.6%
Age								
18-29	42.2%**	23.7%**	0.0%**	31.5%	15.9%	16.5%	9.5%	9.5%
30-44	39.8%**	46.7%**	69.6%**	44.8%	45.2%	55.9%	55.6%	55.6%
45-59	16.9%**	28.1%**	26.1%**	22.2%	31.8%	22.1%	27.0%	27.0%
60-64	1.2%**	1.5%**	4.3%**	1.5%	7.0%	5.5%	7.9%	7.9%
	100%	100%	100%	100%	100%	100%	100%	100%
% of the family	51.7%	40.7%	7.6%		46.4%	36.7%	17.0%	

** $p < 0.01$

[1] An initial version of this text was presented at the last meeting of AGRH in Lyons, France. A second draft of this paper was presented at the Academy of Management meeting in Toronto in August 2000. The authors would like to thanks the editors for their valuable comments.

[2] To obtain equal groups in logistic regression analyses, we used a sampling factor of 0.08 for multiple jobholders and 0.125 for self-employed workers.

[3] $[(1+e^{-(a+b)})^{-1} / (1-e^{-a})^{-1}]-1$.

[4] Other statistical tests allow evaluation of the significance of the -2 log likelihood whose classification ensues from the model. Several authors including Hosmer & Lemeshow (1989) warn that these results should not be used to assess the predictive capacity of the model because they are overly influenced by factors independent of the performance level of the model, notably the segregation point (0.5) and the relative size of each of the groups.

dividuals to be flexible. Consequently, it is not surprising that several authors (Davis-Blake and Uzzi, 1993; Matusik & Hill, 1998) reported that organizations that operate in an unstable or seasonal environment would benefit greatly from adopting a strategy of externalization and from offering atypical jobs. In addition, this sector of activity is replete with small contractors, subcontractors and craftspeople that can easily engage in multiple jobholding and self-employment.

To conclude the discussion of sector, it is worth noting that holding a job in the management services sector increases the probability of self-employment. Indeed, our results illustrate a trend toward outsourcing of many activities formerly carried out by the core workforce of organizations. It would be interesting to more precisely determine the management activities that are most affected. Overall, it is clear that atypical work affects activities that were formerly carried out by the central core work force (Booth, 1997; Chênevert and Tremblay, 1995; Jacob, 1993). It would also be interesting to investigate, in future studies, the size of the organization because the number of employees within a specific sector may impact the formality and longevity of the job relationship and thus become an important determinant of atypical employment.

In the area of unionization, our results reflect those of Blanchflower and Meyer (1994) in that the fact of having held a unionized job five years earlier reduces the probability of becoming self-employed. The advantages of unionization in terms of job conditions and job security may be dissuasive factors in the decision to abandon a traditional job in favor of self-employment. Nonetheless, the growing presence of atypical workers poses a major challenge for unionized organizations: that of representing workers whose interests vary considerably and whose presence in the job market is often virtual (Mackbride-King, 1997; Wever, 1997).

At first glance, for both multiple jobholding and self-employment, the results relating to occupational category held five years ago confirm that individuals in hierarchical situations are unlikely to engage in atypical work. These results corroborate studies (Addison & Surfield, 2006; Brousseau et al. 1996; Hall, 1996) that conclude that new careers lack a hierarchy. At the very least, one can presume that individuals that find themselves in traditional career paths, characterized by relative job stability, promotions and high social status, as is the case for senior and middle managers, are not truly affected by the phenomenon studied. Our results nonetheless illustrate that more highly skilled jobs such as those held by professionals and semi-professionals, are beginning to be slightly but significantly affected by multiple jobholding. Here again, the results show that atypical work extends to activities and functions that call for skills previously found within the core workforce; in other words, the phenomenon concerns essential but non-critical tasks (Booth, 1997; Chênevert and Tremblay, 1995; Jacob, 1993).

With regard to multiple jobholding, the results related to the frequency of movement confirm the findings reported in the literature, namely that respondents that have experienced high non-ascending mobility are more likely to hold multiple jobs. In line with the literature on new careers, this observation implies that multiple jobholders experience more mobility than the majority of workers with traditional career itineraries. In contrast, frequency of movement does not influence the probability of being self-employed. There are two possible explanations for this situation. First, several self-employed workers may have been in a very stable job situation before the study; this possibility should be explored. In addition, one should bear in mind that self-employed workers do not change jobs frequently, the changes mainly concern the clientele.

Lastly, for these two forms of non-standard employment it is clear that hierarchical experiences are not predominant, reflecting a fundamental characteristic of new careers (Arthur & Rousseau, 1996; Bailly et al., 1998; Hall, 1996). Studies on career plateauing (Tremblay, 1995) have demonstrated the way in which the concept of the traditional career is being increasingly eroded by structural or individual blockage mechanisms.

Concerning individual variables, only the gender of the respondent exerts a significant influence. Indeed, our results point in the expected direction. The gender of the respondent does not influence the probability of holding multiple jobs. In addition, the results obtained for self-employment support the specialized literature (Matthews & Moser, 1995), which states that men have a higher probability of being self-employed than women. These results suggest that in the atypical job context, occupational distribution apparently perpetuates stereotypes associated with traditional jobs. For instance, male self-employed workers are concentrated in professional and managerial professions, whereas women predominate in secretarial and office jobs, a pattern that reproduces within atypical jobs the same sexual stereotypes found in traditional jobs (Maler & Milkovich, 2000). Moreover, these results confirm those of Carr (1996), which clearly demonstrates that men and women do not hold atypical jobs for the same reasons and at the same ages.

Following the analyses of the differentiation between multiple jobholders and self-employed, we assert that these two forms of atypical jobs differ. Despite similarities within each of these two types of non-standard work, it is quite evident that the families are by no means homogeneous groups. In addition, the differentiation of families within the multiple jobholder and self-employed worker groups highlights the discriminating influence of education. Our results show that the higher the respondents' education, the more likely they will belong to the star or conqueror family, a finding that corroborates the conclusions of several researchers (Carr, 1996; Jurik, 1998). Therefore, even if the trend is clearer for the stars, multiple jobholders and self-employed workers follow the same logic pattern as standard workers, in that education apparently engenders markedly better living conditions. Annual income of both stars and conquerors is much higher than the average income. Nonetheless, higher income often co-occurs with longer work weeks. Women are over-represented among the insecure and the victims, which tends to indicate that they do not occupy choice places in the atypical labor force.

Conclusion

The results of this study clarify the role of some organizational and individual variables in the probability of being a multiple jobholder or self-employed worker. Eight out of twelve sectors of activity influence this probability for self-employed workers. As for determining sectors, we have observed that the probability of being a self-employed worker decreases by 86.1% among respondents that work in public administration, thus confirming the lack of importance placed on this employment link in the government apparatus. The sector variable nonetheless has a more mitigated effect on multiple jobholding, because only two sectors of activity influence the probability of holding multiple jobs. More generally, our results clearly demonstrate that the construction sector is characterized by a constant search for external flexibility, because only this sector positively influences the probability of joining one of the atypical groups studied.

In terms of career-related factors, ascending mobility plays a unique role. This effect, homogeneous for both multiple jobholding and self-employment, is significantly manifested with respect to the probability of engaging in either of these atypical forms of employment. The fact of being promoted in the five years prior to the survey thus substantially reduces the chances of belonging to one of the two atypical employment categories studied, whereas non-ascending mobility increases only the probability of holding multiple jobs. Further, individuals that held senior and middle manager positions five years prior to the survey have a substantially lower probability of holding multiple jobs and being self-employed, thus confirming the persisting impact of more traditional career paths on occupational categories with a high hierarchical status. Consequently, we can consider that individuals in a situation of blockage in traditional paths may be inclined to adopt these forms of atypical employment in order to satisfy expectations beyond promotion and financial status.

Lastly, aside from the fact that men are over-represented in the self-employed category and that their probability of taking on this atypical employment is higher, gender has no influence on multiple jobholding. It is worth mentioning that these two forms of atypical employment are subdivided into families that are not homogeneous in terms of annual income, level of education, hours worked and average age. In addition, women are much more prevalent in the families that have the most precarious job and living conditions. Nonetheless, major differences exist among the families of multiple jobholders and self-employed workers, and prudence is thus recommended to avoid indiscriminately pairing the concepts of atypical and precarious. In conclusion, although precariousness is indeed present, it is not a sine qua non of atypical employment.

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Determinants organisationnels et individuels de l'emploi atypique: le dossier du cumul d'emplois et du travail autonome au Canada

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RÉSUMÉ

Le besoin croissant d'une flexibilité organisationnelle a provoqué le recours de plus en plus fréquent à l'emploi atypique. Le cumul d'emplois et le travail autonome sont des formes d'emplois atypiques qui ont particulièrement intrigué les chercheurs. À l'aide de données compilées par Statistique Canada, nous avons identifié des facteurs qui influencent la probabilité d'appartenir à l'une ou l'autre de ces deux catégories d'emplois. Nos résultats suggèrent que les facteurs d'influence ne sont pas identiques pour les deux catégories d'emplois non conventionnels étudiées. Le secteur d'activité, le genre et l'absence de promotion affectent considérablement la probabilité de joindre les rangs des travailleurs autonomes, tandis que la catégorie professionnelle et la fréquence des mouvements des travailleurs influencent de manière significative la probabilité d'appartenir au groupe des personnes qui occupent plusieurs emplois. Les populations qui s'engagent dans ces deux formes de travail atypique ne sont pas homogènes.

Introduction[1]

Depuis plusieurs années, les organisations sont secouées par de profonds changements structuraux, aggravés par l'apparition de philosophies de la gestion qui ont des répercussions sur l'organisation du travail et la nature du marché de l'emploi. Au cœur des modifications structurelles radicales qui touchent les organisations se trouve un objectif généralisé et constant : l'amélioration de la flexibilité organisationnelle (Keller et Seifert, 2005; Atkinson, 1984; Chênevert et Tremblay, 1995). Tout indique que cette quête de flexibilité et la croissance des différentes formes d'emplois atypiques chez la population active sont deux phénomènes indissociables. Les questions relatives à la mobilisation sont des éléments nécessaires aux analyses de l'emploi atypique, étant donné que le recours à des travailleurs non conventionnels augmente l'autonomie, l'indépendance et la distance entre les personnes et les organisations (Torka, 2004; Payette, 1998). Les formes d'emplois atypiques, comme le travail autonome, transforment considérablement les aspects du contrôle puisque, dans ces cas, le contrôle s'exerce pour une grande part par l'atteinte des objectifs et les résultats d'un mandat global. Le contrôle organisationnel est donc limité aux produits, non aux procédés, et la gestion des ressources humaines peut être comparée à une relation client/fournisseur.

Comme les diverses formes d'emplois atypiques gagnent du terrain, la consolidation de ces types de travail renforce la thèse de la décroissance constante de la main-d'œuvre permanente (Ogoshi, 2006; Booth, 1997; Macbride-King, 1997). Il existe un consensus à l'effet que ces formes d'emplois gagnent constamment du terrain chez la population active canadienne, et de manière encore plus poussée en Europe et dans l'ensemble de l'Amérique du Nord (Buschoff et Protsch, 2008; Booth, 1997; Hipple, 2001; Krahn, 1991, 1995). Certains auteurs argumentent que les organisations, en visant de plus en plus la flexibilité externe, se dégagent partiellement de la responsabilité de la gestion des carrières (Brousseau et al., 1996; Hall, 1996). La prédominance des pratiques de gestion orientées vers l'accroissement de la flexibilité organisationnelle et la consolidation du travail non conventionnel contribue donc directement à l'accélération de l'évolution du paradigme de la carrière traditionnelle.

La gestion de carrière organisationnelle classique impliquait l'existence de canaux de mobilité professionnelle qui permettaient aux individus de grimper les échelons par une série de postes et de fonctions, ainsi que d'un système d'identification des candidats potentiels et de mécanismes de gestion qui appuyaient et dirigeaient les individus (Smith et Sheridan, 2006; Caudron, 1994). Dans ce système de gestion des carrières, les personnes pouvaient ne consacrer qu'un peu de temps à organiser leur cheminement de carrière, puisqu'ils suivaient des modèles assez standardisés qui correspondaient à des critères tels que la qualification, l'âge, le niveau et l'ancienneté. Ces modèles de carrière ont évolué dans des environnements sociaux et organisationnels relativement stables et prévisibles, qui contrastent nettement avec les nouvelles carrières dont le développement et la consolidation se font dans un environnement organisationnel instable et en constante mutation. Il en résulte que la représentation de la carrière traditionnelle ne constitue plus un paradigme de référence universel, même si plusieurs universitaires « nostalgiques » continuent de s'accrocher à la notion d'universalité et veulent désespérément que le paradigme reste le même. Les formes d'emplois atypiques que sont le cumul d'emplois et le travail autonome méritent une attention spéciale en regard de leur croissance importante, continue et

rapide (Edwards et Hendrey, 1996; Kranh, 1995).

La question de recherche à la base de notre analyse est la suivante : quels sont les déterminants organisationnels et individuels qui augmentent la probabilité qu'un travailleur ordinaire rejoigne les rangs des travailleurs autonomes ou cumulant les emplois. Notre hypothèse examine la probabilité qu'un travailleur ordinaire s'engage dans l'une de ces deux formes d'emplois atypiques. À notre connaissance, les plupart des études sur ce sujet se limitent à des analyses descriptives dont le principal objectif est d'identifier les caractéristiques individuelles des travailleurs atypiques (Akyeampong, 1997; Kranh, 1995; Webber, 1989). Sauf Carr avec son étude des déterminants du travail autonome (1996), peu d'universitaires ont sérieusement tenté de prédire le recours à des formes spécifiques d'emplois atypiques, et aucun n'a effectué ce type d'analyse à la fois sur le cumul d'emplois et le travail autonome de la population active canadienne; ces résultats d'analyse forment les principaux objectifs du présent article.

1 Déterminants d'un emploi atypique

La plupart des études sur l'internalisation et l'externalisation du travail sont basées sur la théorie de la dualité du marché proposée par Doeringer et Piore (1971). Cette théorie énonce que l'internalisation du travail, généralement discutée dans le contexte du marché interne de l'emploi, améliore la stabilité de la main-d'œuvre tout en permettant à l'organisation de mieux contrôler ses employés. En outre, dans une organisation dont la structure hiérarchique favorise la mobilité entre les emplois, le marché interne fournit aux employés les compétences nécessaires et les possibilités de développement de carrière pour assurer leur fidélité. Néanmoins, comme cette approche encourage la stabilité et le contrôle, elle est coûteuse et parfois difficile à appliquer pour les compagnies qui opèrent dans un environnement instable et turbulent (Davis-Blake et Uzzi, 1993).

En contraste, l'externalisation du travail améliore la flexibilité organisationnelle, facilitant ainsi l'adaptation aux conditions changeantes du marché et la rapidité de réponse aux demandes organisationnelles. L'externalisation du travail permet à une organisation d'adapter son personnel aux exigences d'un marché changeant et donc de réduire les coûts d'administration et de main-d'œuvre. Les compagnies peuvent aussi mettre fin à un poste sans ternir leur image; de plus, elles obtiennent un accès facile à des ressources spécialisées, sans devoir offrir un engagement à long terme en échange (Belous, 1989; Matusik et Hill, 1998). L'externalisation du travail est donc une stratégie qui contribue directement à l'émergence et à la consolidation des « carrières sans limites ».

Contrairement aux cheminements de carrière traditionnels, qui sont généralement caractérisés par une trajectoire linéaire et séquentielle au sein d'une même organisation, les carrières sans limites donnent lieu à des cheminements de carrière qui dépassent les frontières des états de travail traditionnels. De tels cheminements sont associés à de nouvelles formes de carrières créées par la croissance des emplois atypiques. Tandis que les conditions du marché de l'emploi propulsent les individus vers ce type de carrière, la documentation récente mentionne que beaucoup de gens opteront pour une carrière sans limites en raison de la valeur d'échange de leur capital humain ou de leur expérience du marché de l'emploi. Un autre élément de motivation est que ce type de carrière favorise le développement de l'expertise des travailleurs en les mettant en contact avec plusieurs entreprises au lieu d'une seule (Marler et al., 1998), une situation qui s'applique certainement à une grande proportion de la population active.

Comme Davis-Blake et Uzzi (1993) l'ont observé, les facteurs qui influencent l'internalisation du travail sont identiques à ceux qui incitent à recourir à l'externalisation du travail. Le modèle analytique que nous avons adopté met spécialement l'accent sur les facteurs liés aux caractéristiques organisationnelles (par. ex. : secteur d'activité, syndicalisation), aux caractères qualitatifs de l'emploi et de la carrière (par ex. : type d'emploi, promotions, mobilité) et aux caractéristiques individuelles (par ex. : genre).

1.1 Caractéristiques organisationnelles

Secteur d'activité

Certains secteurs d'activité ont de tout temps été identifiés comme ayant activement recours au travail atypique en raison de leur forte propension à favoriser l'externalisation du travail. Par exemple, le secteur de la construction et le secteur des services endossent une stratégie de dotation en personnel orientée vers l'utilisation d'emplois atypiques, plus précisément les travailleurs autonomes et ceux qui cumulent plusieurs emplois, dû à la nature saisonnière de leurs activités ou au besoin de s'adapter aux exigences du service à la clientèle (Bregger, 1996; Hipple, 2001). En contraste, les secteurs comme le secteur public ont historiquement un faible taux de recours aux emplois atypiques. Ce phénomène a été attribué au besoin du gouvernement de démontrer sa responsabilité sociale et une attitude de bon citoyen (Davis-Blake et Uzzi, 1993). Néanmoins, il est difficile d'identifier clairement l'influence précise d'un secteur d'activité sur la probabilité d'adopter une forme spécifique d'emploi atypique.

Syndicalisation

Les études portant sur la relation entre la syndicalisation et les emplois atypiques n'ont pas toujours donné des résultats concluants (Bielmann et al., 1999; Davis-Blake et Uzzi, 1993). Néanmoins, il a été démontré que pour éviter l'influence syndicale, certaines organisations ont tenté de sous-traiter le travail afin de maximiser l'utilisation des ressources humaines hors du contrôle du syndicat. Quoi qu'il en soit, des études récentes menées aux États-Unis rapportent que seulement 5,9 % des employés atypiques sont syndiqués, contre 14,8 % des employés à temps plein (Hipple, 2001). De plus, les syndicats sont traditionnellement opposés à l'externalisation du travail et obligent souvent les employeurs à n'utiliser cette pratique que de façon restreinte en plaidant la nécessité

d'augmenter la stabilité et la sécurité d'emploi afin de créer une atmosphère propice à la négociation collective (Davis-Blake et Uzzi, 1993).

1.2 Attributs des emplois et des carrières

Comme il est mentionné précédemment, la documentation démontre que la recherche d'une flexibilité s'étend aux activités centrales non critiques pour les organisations. Il en résulte que le travail atypique n'est pas limité aux emplois peu spécialisés et aux catégories d'emploi n'exigeant que peu ou pas d'instruction (Caudron, 1994; Hipple, 2001; Matusik et Hill, 1998); en conséquence, toutes les catégories d'emploi devraient être touchées également. La documentation spécialisée révèle que beaucoup de travailleurs autonomes sont très instruits, ce qui implique qu'ils détiennent des postes spécialisés (Carr, 1996; Meyer et Bruce, 1996).

Depuis au moins dix ans, plusieurs analystes ont étudié les enjeux qui remettent en question la notion traditionnelle de la carrière. L'opinion classique a depuis été renversée, un phénomène qui est encore plus évident dans un contexte d'emploi atypique généralisé. Vu que la rareté du mouvement hiérarchique se manifeste comme l'une des caractéristiques de la généralisation du plafonnement des carrières traditionnelles et aussi une nette tendance vers le recours systématique de l'emploi non conventionnel, l'absence de promotion augmente substantiellement la probabilité de devenir un travailleur atypique (Marler et Milkovich, 2000; Simard, 2000). En 1994, les travailleurs atypiques canadiens étaient plus susceptibles que les travailleurs ordinaires de se trouver dans des carrières n'offrant pas de mouvement ascendant, bien que ce facteur n'ait pas eu d'influence considérable sur la probabilité d'être un travailleur atypique (Carr, 1996; Simard, 2000).

1.3 Caractéristiques individuelles

Plusieurs variables individuelles peuvent aussi influencer la probabilité d'être travailleur autonome ou de cumuler plusieurs emplois. Le sexe, l'éducation et l'âge sont des exemples importants. Tandis que l'effet global de ces variables est erratique, le sexe fait exception : la documentation spécialisée suggère que les femmes sont plus présentes que les hommes dans l'ensemble des emplois atypiques étudiés, et ce, pour de nombreuses raisons.

Nous avons regroupé certaines des explications les plus fréquentes en deux catégories principales. D'abord, une explication de la présence plus forte des femmes travailleuses autonomes relève du choix personnel. Ces travailleuses sont motivées par la recherche d'une plus grande flexibilité à cause de ses effets présumés sur la diminution des conflits liés à l'équilibre travail-famille (Hipple, 2001; Jurik, 1998; Marler et Milkovich, 2000).

Par contraste, et dans une perspective dominée par une approche plus schumpétérienne des contraintes structurelles, le travail autonome correspond à une réponse au chômage ou un refuge pour les travailleurs vieillissants. Carr (1996) a établi que les hommes et les femmes choisissent le travail autonome pour des motifs différents, mais que dans l'ensemble ces motifs tirent leur source des contraintes quant au choix de carrière. Toutefois, d'un strict point de vue factuel, les hommes sont nettement plus nombreux que les femmes chez les travailleurs autonomes, une tendance identifiée par des études américaines (Matthews et Moser, 1995).

En dernier lieu, notre recherche précédente avait conclu que les travailleurs canadiens qui cumulent plusieurs emplois ne forment pas un groupe très homogène (Simard, 1997). La même conclusion s'applique aux travailleurs autonomes (Carr, 1996; Jurik, 1998; Marler et Milkovich, 2000). Ces formes d'emplois atypiques sont associées à des caractéristiques individuelles, des conditions et des possibilités de vie inégales pour le même type de travailleurs (Carr, 1996; Hipple, 2001).

2 Méthodologie de recherche

Pour atteindre nos objectifs de recherche, nous avons utilisé des données préexistantes de Statistique Canada, à savoir le fichier de microdonnées de l'Enquête sociale générale (ESG). Dans le présent article, nous examinons les répondants de la section H, c.-à-d. des individus faisant partie de la main-d'œuvre active au moment de l'enquête (ce qui exclut les retraités, mais pas la population active âgée de 65 ans et plus). L'échantillon comprend donc 6 365 cas. Remarquez que deux échantillons sont analysés : 808 individus pour la régression du cumul d'emplois et 1 204 travailleurs autonomes.[2]

2.1 Définition opérationnelle des variables

Variables dépendantes

Les variables dépendantes sont dichotomiques et correspondent à l'état d'emploi des répondants : travailleur qui cumule les emplois ou travailleur autonome. Ceux qui cumulent plusieurs emplois sont couverts directement à la question H1, qui demande aux répondants s'ils ont exercé plus d'un emploi pendant la semaine précédant l'enquête. Le travail autonome est une variable construite qui regroupe les individus qui se déclarent des professionnels à leur compte à la question H13, et ceux qui se considèrent eux-mêmes comme des travailleurs autonomes à la question H8, et qui n'ont pas d'employés, c.-à-d. la réponse à la question H9. Cette transformation et ce contrôle sont nécessaires pour éviter de compter des répondants qui se retrouvent plus d'une fois dans plusieurs variables. De plus, si un travailleur autonome a des employés, il est considéré comme un employeur plutôt qu'un travailleur non conventionnel.

Variables indépendantes

Nous allons maintenant décrire les sept variables indépendantes intégrées dans les deux équations de régression logistique. D'abord, il y a deux caractéristiques organisationnelles : le secteur d'activité dans lequel les répondants situent principalement leurs activités de travail dans les cinq dernières années et si les répondants ont occupé un emploi syndiqué il y a cinq ans. Cette dernière variable est dichotomique et elle est inscrite en forme brute dans la base de données.

Pour le secteur d'activité, nous avons enregistré la variable originale construite par Statistique Canada et basée sur une question ouverte. Cette variable comprend 18 secteurs d'activité, tandis que la variable que nous avons utilisée comprend les secteurs primaire, manufacturier et commercial.

Les attributs d'emploi et de carrière sont le point central des questions qui déterminent la catégorie professionnelle d'il y a cinq ans, avec le nombre de changements d'emplois sans mobilité verticale ni promotion dans les cinq dernières années. La catégorie professionnelle d'il y a cinq ans est déterminée par une question ouverte codée en fonction de la classification des professions en 16 catégories de Pinéo. Nous avons recodé cette variable en six catégories en groupant les professionnels dans la première catégorie, les gestionnaires-cadres dans la seconde, les superviseurs et les contremaîtres dans la troisième, les vendeurs dans la quatrième, les ouvriers manuels dans la cinquième et les fermiers et travailleurs agricoles dans la sixième.

Le nombre de mouvements durant les cinq dernières années est obtenu par une question qui demande aux répondants d'indiquer le nombre d'emplois différents exercés, et plus précisément l'occupation de différents postes dans la même entreprise ou une autre. La somme de ces deux variables fournit la base de la variable utilisée dans la présente étude. La variance est faible après six emplois et nous avons groupé les répondants en sept catégories de 'un' à 'sept et plus'. Le nombre de promotions est évalué par une question ouverte. Comme pour le nombre d'emplois, nous avons groupé les répondants en cinq catégories : aucune, une, deux, trois/quatre, et cinq et plus. En dernier lieu, pour les variables individuelles, nous avons utilisé le sexe (1=femme; 2=homme) et l'âge. Cette variable est produite en se basant sur une variable métrique et comporte cinq catégories : 18-29, 30-44, 45-59, 60-64, et 65 et plus.

Dans les analyses bivariantes utilisées pour décrire les familles de travailleurs cumulant plusieurs emplois et les travailleurs autonomes, nous avons aussi utilisé le nombre d'heures travaillées par semaine, le revenu annuel et le plus haut niveau de scolarité atteint. La durée de la semaine de travail est obtenue par une question ouverte qui produit une variable métrique que nous avons utilisée comme telle. Le revenu annuel des répondants est enregistré par le même type de variable et est utilisé à l'état brut, tandis le niveau de scolarité est mesuré par échelle ordinale de 12 catégories, où la plus basse catégorie correspond à aucune scolarité. La variable comporte cinq catégories : études supérieures, certificat, études de premier cycle, études postsecondaires et l'équivalent d'un diplôme de secondaire V (11e année) ou moins.

2.2 Méthodes d'analyse

Pour répondre adéquatement aux questions soulevées par la documentation spécialisée, nous avons utilisé l'analyse de régression logistique et les diverses analyses bivariantes. Pour la régression logistique, nous avons recouru à la méthode ENTER pour forcer toutes les variables dans l'équation. Les quatre variables de catégorie (secteur d'activité, nombre de mouvements, nombre de promotions et catégorie professionnelle) sont intégrées dans le modèle de régression avec la technique de déviation. Cette technique permet de générer des coefficients qui expriment l'impact divergent de chacune des catégories de la variable par rapport à l'effet général de la variable. Les trois autres variables sont dichotomiques et sont intégrées dans le modèle en utilisant la technique de l'« indicateur », ce qui permet la sélection de la catégorie de la variable incluse dans la constante. Au départ, l'analyse de régression logistique évalue la validité du modèle global, c.-à-d. la capacité du modèle à reproduire les données originales au niveau de la signification de = 0,05. Dans ce cas, l'hypothèse de différence nulle, qui exprime la similitude du modèle global au modèle qui contient la constante, doit seulement être acceptée. Bien que les résultats de la table de classification aient été utilisés par certains universitaires, cette statistique n'est pas fiable, étant donné qu'elle est surtout descriptive (Hosmer et Lemeshow, 1989). On peut utiliser la variable chi carré qui clarifie le caractère signifiant de la variation de -2 du logarithme du rapport de vraisemblance. Pour identifier les variables qui influencent la probabilité de devenir un travailleur qui cumule les emplois ou un travailleur autonome, nous avons recours au critère de pessimisme de Wald pour évaluer l'importance de la contribution d'une variable ou d'une catégorie de variables. Pour tirer au clair l'effet individuel des variables signifiantes, l'impact de chaque variable est traduit en une variation nette (pourcentage) de la probabilité de base.[3]

Pour isoler les familles dans chacune des formes atypiques d'emplois sélectionnées, nous avons procédé à une analyse typologique avec les variables du revenu annuel et de la durée de la semaine de travail. Les groupes produits dans ces analyses serviront de variables indépendantes dans les analyses bivariables pour produire des résultats descriptifs.

3 Résultats

L'Enquête sociale générale indique que 7,2 % des répondants avaient plusieurs emplois. Les travailleurs autonomes représentaient 11,6 % de l'ESG, un résultat comparable aux données américaines correspondantes (Edwards et Hendrey, 1996; Segal, 1996).

L'analyse de régression logistique montre que la validité d'un modèle global est importante parce que la valeur du chi carré de la qualité de l'ajustement est 482,245 — la distribution critique des chi carrés avec 27 degrés de liberté est 55,47 — p = 0,000 — pour le modèle concernant le travail autonome, alors que les statistiques pour ceux qui exercent plusieurs emplois sont de 113,765 pour le chi carré.[4] Le modèle global est significatif parce que les coefficients sont dans l'ensemble différents de zéro (p = 0,000). Les deux modèles génèrent donc des prédictions valables de la probabilité de devenir un travailleur qui cumule les emplois ou un travailleur autonome. Néanmoins, la capacité prédictive des deux modèles n'est pas identique. La statistique de Cox et Snell, qui donne un pseudo R^2, révèle que le

modèle utilisé pour les travailleurs qui cumulent les emplois n'explique que 13 % (R^2=0,131) de la probabilité de passer du travail conventionnel au cumul d'emplois, tandis le travail autonome est nettement plus fort (R^2=0,330).

Seulement trois variables sont exclues du modèle utilisé pour le cumul d'emploi : l'âge, le sexe et l'appartenance à un syndicat. Concernant le travail autonome, deux variables sont rejetées : le nombre d'emploi au cours des cinq dernières années et le groupe d'âge.

3.1 Caractéristiques organisationnelles

Le tableau 1 présente les résultats des analyses de régression logistique effectuées pour les travailleurs qui cumulent des emplois et les travailleurs autonomes.

Le **secteur d'activité** a une influence déterminante sur la probabilité d'être travailleur autonome (Wald = 100,7830). Ce résultat diffère considérablement dans le cas des travailleurs occupant plus d'un emploi. Le tableau 1 révèle que 8 des 12 secteurs d'activité de la variable originale ont un effet important sur la probabilité de devenir un travailleur autonome. De ces secteurs, quatre produisent un effet négatif et les quatre autres ont un effet positif.

La probabilité de devenir travailleur autonome baisse de 86,1 % pour les personnes qui travaillent dans l'administration publique, de 44,2 % dans le secteur des communications et des services publics, de 29,7 % dans le secteur manufacturier et de 26,9 % dans le secteur de l'éducation. En contraste, le secteur des services du personnel augmente cette probabilité de 31,6 %, la construction de 30,6 %, les services de gestion de 29,2 % et la finance, l'assurance et l'immobilier de 16,8 %. Concernant les personnes qui détiennent plusieurs emplois, les résultats montrent que le secteur d'activité a un effet moindre sur cette variable (Wald = 14,5669). Néanmoins, pour les individus qui travaillent dans le secteur de la construction, la probabilité de cumuler plusieurs emplois augmente de 46,7 %, tandis que celle des travailleurs du secteur de la finance, de l'assurance et de l'immobilier baisse de 41,2 %. Dans ce dernier cas, l'influence est forte mais négative, ce qui indique que ce secteur n'a pas recours au cumul d'emploi; ce qui ne signifie pas, toutefois, que toutes les formes d'emplois atypiques sont exclues.

En dernier lieu, la **syndicalisation** exerce une influence mitigée sur la probabilité de devenir travailleur autonome, mais pas de cumuler les emplois, ce qui s'explique par le fait que les personnes qui cumulent les emplois utilisent des formes atypiques qui sont généralement syndiquées, comme le travail à temps partiel. En conséquence, avoir exercé un emploi non syndiqué cinq ans avant l'étude augmente la probabilité d'être travailleur autonome de 16,1 %.

3.2 Attributs d'emplois et de carrières

Concernant l'influence de la **catégorie professionnelle** occupée il y a cinq ans, le tableau 1 montre que 2 des 7 catégories de la variable originale affectent la probabilité de cumuler plusieurs emplois. L'influence de cette variable est comparable à celle du secteur d'activité (Wald = 15,2970). Les deux catégories les plus influentes sont celle des professionnels et semi-professionnels, et celle des cadres

Tableau 1 : Variation nette de la probabilité de cumuler plusieurs emplois ou d'être travailleur autonome

Variables	Facteur de multiplication Exp (B)	Points de pourcentage	Variation nette en %
Travail autonome			
Secteur manufacturier	-0,8025	-19,5 %	-29,7 %
Construction	1,1498	20,1 %	30,6 %
Administration et service public	-1,1977	-29,1 %	-44,2 %
Personnel	1,2067	20,8 %	31,6 %
Finance, assurance, immobilier	0,5443	11,1 %	16,8 %
Gestion	1,0743	19,2 %	29,2 %
Éducation	-0,7278	-17,6 %	-26,9 %
Administration publique	-2,9472	-56,6 %	-86,1 %
Gestion (cadres supérieurs et intermédiaires)	-0,5625	-13,5 %	-20,6 %
Une promotion ou plus – 5 ans avant	-1,4303	-34,3 %	-52,2 %
Non syndiqué – 5 ans avant	0,5194	10,6 %	16,1 %
Homme	0,4487	9,3 %	14,2 %
Cumul d'emplois			
Construction	0,5206	10,1 %	46,7 %
Finance, assurance, immobilier	-0,6395	-8,9 %	-41,2 %
Professionnel et semi-professionnel	0,5790	11,4 %	52,6 %
Gestion (cadres supérieurs et intermédiaires)	-0,4941	-7,2 %	-33,4 %
4 emplois ou plus	0,5078	9,8 %	45,4 %
Une promotion ou plus – 5 ans avant	-0,4820	-7,1 %	-32,7 %

supérieurs et intermédiaires. Pour le premier groupe (les répondants qui occupaient un poste en tant que professionnel ou semi-professionnel il y a cinq ans), la probabilité de cumuler plusieurs emplois augmente de 52,6 %, tandis qu'elle baisse de 33,4 % dans le cas des répondants qui occupaient un poste de cadre supérieur ou intermédiaire cinq ans avant l'enquête.

Pour le travail autonome, le tableau 1 montre que l'influence de la catégorie professionnelle est relativement faible (Wald = 16,4104). Par conséquent, 1 catégorie sur 7 de la variable originale affecte la probabilité d'un travail autonome. Notez que les répondants qui étaient des cadres supérieurs ou intermédiaires il y a cinq ans sont 20,6 % moins susceptibles d'être travailleurs autonomes. Ce résultat est compatible avec celui obtenu pour les détenteurs de plusieurs emplois et indique que cette catégorie professionnelle est affectée par ces formes atypiques d'emplois, et peut-être même par tous les types de travail non conventionnel.

En outre, le tableau 1 révèle que certains éléments de la carrière ont une nette influence sur la probabilité de se retrouver dans une situation de cumul d'emplois. C'est clairement le cas en ce qui a trait à la **fréquence et à la direction du mouvement** dans les cinq ans qui ont précédé l'enquête (Wald = 53,8196 et Wald = 41,1818). Les répondants qui ont connu une ou plusieurs promotions dans les cinq dernières années étaient moins susceptibles dans une proportion de 32,7 % de cumuler plusieurs emplois et moins susceptibles dans une proportion de 52,2 % d'être travailleurs autonomes. De plus, une fréquence très élevée de mouvement non hiérarchique (plus de cinq emplois) augmente de 45,4 % la probabilité de détenir plusieurs emplois. En contraste, la fréquence de mouvement dans les cinq dernières années n'influence pas la probabilité d'être travailleur autonome.

3.3 Caractéristiques individuelles

En ce qui a trait au travail autonome, une seule caractéristique individuelle influence la probabilité d'adopter cette forme d'emploi atypique : le sexe du répondant. La probabilité qu'un homme soit travailleur autonome est 14,2 % plus élevée. Quant au cumul d'emplois, aucune variable individuelle n'émerge de cette analyse de régression logistique, ce qui implique que la probabilité de cumuler plusieurs emplois est égale chez les hommes et les femmes.

3.4 Cumul d'emplois et travail autonome : homogénéité ou hétérogénéité?

Le tableau 2 montre qu'il est possible d'isoler trois grandes familles de personnes qui cumulent plusieurs

Tableau 2 : Familles des travailleurs cumulant les emplois et des travailleurs autonomes

	Travailleurs cumulant les emplois				Travailleurs autonomes			
	Insécures	Accomplis	Stars	% réf.	Victimes	Survivants	Conquérants	% réf.
H de travail/semaine	41	52	55**		37	47	54**	
Niveau de scolarité								
Études supérieures	2,3 %**	6,7 %**	32,0 %**	6,3 %	1,7 %**	4,4 %**	15,9 %**	5,1 %
Baccalauréat	13,1 %**	21,5 %**	36,0 %**	18,2 %	1,7 %**	21,3 %**	49,2 %**	21,3 %
Certificat université	1,7 %**	5,2 %**	8,0 %**	3,6 %	11,0 %**	3,7 %**	3,2 %**	2,7 %
Collège	26,9 %**	34,1 %**	12,0 %**	28,7 %	32,0 %**	26,5 %**	12,7 %**	26,7 %
Secondaire ou moins	56,0 %**	12,0 %**	12,0 %**	43,3 %	53,5 %**	44,1 %**	19,0 %**	44,2 %
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Revenu annuel moyen	21 092 $	45 414 $	86 987 $**		17 665 $	45 952 $	89 158 $**	
Sexe (homme)	36,6 %	60,4 %	64,0 %**	48,1 %	40,1 %	75,7 %	77,8 %**	59,6 %
Âge								
18-29	42,2 %**	23,7 %**	0,0 %**	31,5 %	15,9 %	16,5 %	9,5 %	9,5 %
30-44	39,8 %**	46,7 %**	69,6 %**	44,8 %	45,2 %	55,9 %	55,6 %	55,6 %
45-59	16,9 %**	28,1 %**	26,1 %**	22,2 %	31,8 %	22,1 %	27,0 %	27,0 %
60-64	1,2 %**	1,5 %**	4,3 %**	1,5 %	7,0 %	5,5 %	7,9 %	7,9 %
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
% de la famille	51,7 %	40,7 %	7,6 %		46,4 %	36,7 %	17,0 %	

** $p < 0.01$

[1] Une première version de ce texte a été présentée à la dernière réunion de l'AGRH à Lyons, en France. Une deuxième ébauche du travail a été présentée à la réunion de l'Academy of Management à Toronto en août 2000. Les auteurs désirent remercier les éditeurs pour leurs précieux commentaires.

[2] Pour obtenir des groupes égaux dans les analyses de régression logistique, nous avons utilisé un facteur d'échantillonnage de 0,08 pour les personnes qui cumulent les emplois et de 0,125 pour les travailleurs autonomes.

[3] $[(1+e^{-(a+b)})^{-1} / (1-e^{-a})^{-1}]-1$.

[4] D'autres tests statistiques permettent d'évaluer la signification du logarithme du rapport de vraisemblance -2 dont la classification résulte du modèle. Plusieurs auteurs, dont Hosmer et Lemeshow (1989), font une mise en garde à l'effet que ces résultats ne devraient pas être utilisés pour évaluer la capacité prédictive du modèle parce qu'ils sont trop influencés par des facteurs indépendants du niveau de performance du modèle, particulièrement le point de ségrégation (0,5) et la taille relative de chaque groupe.

emplois : une majorité d'*insécures* (51,7 %), suivie des *accomplis* (40,7 %) et d'une minorité de *stars* (7,6 %), qui se caractérisent par un revenu très élevé. Les *stars* rapportent aussi les plus longues semaines de travail, pourtant leurs résultats sont semblables à ceux de la famille des personnes accomplies. En contraste, les *stars* se démarquent clairement des *insécures* en raison de leurs semaines de travail considérablement plus longues. Lorsqu'on prend en compte le revenu annuel, les *stars* se démarquent nettement des *insécures* et des *accomplis* par un revenu annuel moyen beaucoup plus élevé. Le tableau 2 montre que les hommes et les femmes sont représentés à parts égales dans le groupe des travailleurs qui cumulent les emplois. Toutefois, deux femmes sur trois se retrouvent dans la famille des *insécures*, tandis qu'au contraire, les deux tiers de la famille des *stars* sont des hommes. Les s*tars* constituent la majorité des diplômés universitaires qui cumulent les emplois, tandis que le groupe des *insécures* comprend plus d'individus avec un diplôme d'études secondaires ou moins.

Le tableau 2 distingue trois familles très différentes parmi les travailleurs autonomes. La première est constituée de *conquérants*, qui forment 17 % de la population; la deuxième famille, celle des *survivants,* compte pour 36,7 % et les *victimes* sont la majorité, à 46,4 %. Comme pour les travailleurs occupant plusieurs emplois, une famille de travailleurs autonomes se démarque clairement des autres. Les c*onquérants* ont un revenu annuel moyen de 89 158 $, c.-à-d. deux fois plus élevé que celui des *survivants* et cinq fois plus élevé que celui des *victimes.* En termes d'éducation, les *conquérants* comprennent la majorité des diplômés universitaires qui sont travailleurs autonomes, tandis que la famille des *victimes* comprend plus de la moitié des répondants avec un diplôme d'études secondaires ou moins. En contraste avec ceux qui cumulent les emplois, les hommes sont surreprésentés chez les travailleurs autonomes : 61,6 % de la population qui occupe ce type d'emploi atypique. De plus, les hommes constituent la majorité des *conquérants* et des *survivants*. En termes de durée de la semaine de travail, les *conquérants* de démarquent de manière significative des deux autres familles en raison de leur horaire considérablement plus long.

4 Discussion

Dans l'ensemble, les résultats liés à l'effet du secteur d'activité montrent que le travail autonome tend à se répandre dans plus de secteurs d'activité que le cumul d'emplois. Le fait que les travailleurs autonomes canadiens travaillent dans une variété de secteurs d'activité révèle clairement à quel point cette forme de travail a pénétré le marché de l'emploi. Ces résultats corroborent Matusik et Hill (1998), qui décrivent les avantages de recourir aux emplois atypiques dans certains environnements organisationnels, parce que cette approche favorise la création de connaissances et de compétences dont les organisations ont inévitablement besoin. Toutefois, les résultats obtenus confirment une tendance vers la polarisation, ou le rejet du recours au travail autonome dans certains secteurs d'activité, vu que quatre des secteurs ont une influence positive sur la probabilité d'occuper cette forme d'emploi atypique, tandis que quatre autres secteurs ont un effet négatif. Ce résultat indique donc une résistance à la généralisation des stratégies d'externalisation. Apparemment, certains secteurs d'activité refusent de recourir au travail autonome, c.-à-d. que ce lien d'emploi ne fait pas partie de leur réalité organisationnelle, tandis que d'autres secteurs s'y fient considérablement. Il n'y a pas de sous-représentation notable du travail autonome dans les secteurs traditionnellement liés aux activités du gouvernement, qui n'ont jamais opté pour ce type d'emploi (Hipple, 2001). À cet égard, nos résultats confirment les conclusions qu'on trouve dans la documentation spécialisée (Jurik, 1998; Matusik et Hill, 1998). Néanmoins, le cas du secteur manufacturier est quelque peu surprenant. Bien que le secteur manufacturier ait toujours concentré les ressources humaines et les moyens de production, on pourrait s'attendre, comme le suggèrent Matusik et Hill (1998), à ce que les organisations de ce secteur optent pour le recours à l'emploi atypique, compte tenu surtout qu'un certain nombre de travailleurs autonomes accepteraient probablement de travailler comme sous-traitants, en vertu de contrats de services, dans des lieux et avec des équipements situés à l'extérieur de l'organisation.

De plus, le travail autonome peut facilement prendre de l'ampleur dans le secteur manufacturier parce que, comme dans le secteur immobilier, la forme et l'organisation du travail se prêtent bien à ce type d'emploi. En contraste, le secteur de la construction a un effet positif sur les travailleurs autonomes et sur ceux qui occupent plusieurs emplois. Ce secteur devrait donc être considéré comme accordant une valeur particulière aux stratégies basées sur la flexibilité externe, associée à moins d'engagement des employés et moins de coûts salariaux (Tremblay, D.G, 1990). Parce que le secteur de la construction produit un effet important sur les deux types d'emplois atypiques analysés, nos résultats appuient partiellement les conclusions d'autres études sur le sujet (Bregger, 1996). Ceci est peu surprenant car ce secteur se caractérise par de fréquentes fluctuations d'activité qui obligent les organisations et les individus à être flexibles. Conséquemment, il n'est pas surprenant que plusieurs auteurs (Davis-Blake et Uzzi, 1993; Matusik et Hill, 1998) rapportent que les organisations qui opèrent dans un environnement instable ou saisonnier auraient grandement intérêt à adopter une stratégie d'externalisation et à offrir des emplois atypiques. De plus, ce secteur d'activité regorge de petits entrepreneurs, sous-traitants et artisans qui peuvent facilement s'engager dans le cumul d'emplois et le travail autonome.

Pour conclure la discussion sur les secteurs, il est bien de noter qu'occuper un poste dans le secteur des services de gestion augmente la probabilité du travail autonome. À vrai dire, nos résultats illustrent une tendance vers l'impartition d'un grand nombre d'activités autrefois exécutées par la main-d'œuvre permanente des organisations. Il serait intéressant de déterminer plus précisément les activités de gestion les plus touchées. Dans l'ensemble, il est clair que le travail atypique affecte les activités

autrefois exécutées par la main-d'œuvre permanente (Booth, 1997; Chênevert et Tremblay, 1995; Jacob, 1993). Il serait également intéressant d'étudier dans le futur la taille de l'organisation parce que le nombre d'employés dans un secteur précis peut avoir des conséquences sur la formalité et la longévité de la relation de travail, et donc devenir un déterminant important de l'emploi atypique.

Dans le domaine de la syndicalisation, nos résultats vont dans le sens de ceux de Blanchflower et Meyer (1994) en ce que le fait d'avoir occupé un emploi syndiqué cinq ans plus tôt réduit la probabilité de devenir travailleur autonome. Les avantages de la syndicalisation en termes de conditions de travail et de sécurité d'emploi peuvent être des facteurs dissuasifs dans la décision d'abandonner un travail traditionnel en faveur du travail autonome. Néanmoins, la présence croissante des travailleurs atypiques pose un défi majeur aux organisations syndicales : celui de représenter des travailleurs dont les intérêts varient considérablement et dont la présence sur le marché du travail est souvent virtuelle (Mackbride-King, 1997; Wever, 1997).

À première vue, à la fois pour le cumul d'emploi et pour le travail autonome, les résultats liés à la catégorie professionnelle occupée il y a cinq ans confirment que les personnes occupant des postes hiérarchiques sont peu susceptibles de s'engager dans un travail atypique. Ces résultats corroborent les études (Addison et Surfield, 2006; Brousseau et al. 1996; Hall, 1996) qui concluent que les nouvelles carrières manquent de hiérarchie. À tout le moins, on peut présumer que les personnes qui se trouvent dans un cheminement de carrière traditionnel, caractérisé par une relative stabilité d'emploi, des promotions et un statut social élevé, comme les cadres supérieurs et intermédiaires, ne sont pas vraiment concernées par le phénomène étudié. Nos résultats illustrent néanmoins que les emplois de plus haute spécialisation comme ceux des professionnels et semi-professionnels, commencent à être affectés de manière significative par le cumul d'emplois. Ici encore, les résultats montrent que le travail atypique s'étend aux activités et aux fonctions qui demandent des compétences qu'on trouvait auparavant dans la main-d'œuvre permanente; en d'autres mots, le phénomène concerne des tâches essentielles mais non critiques (Booth, 1997; Chênevert et Tremblay, 1995; Jacob, 1993).

En ce qui a trait au cumul d'emploi, les résultats relatifs à la fréquence du mouvement confirment les résultats rapportés dans la documentation, à savoir que les répondants qui ont connu une grande mobilité non ascendante sont plus susceptibles d'occuper plusieurs emplois. Conformément à la documentation sur les nouvelles carrières, cette observation signifie que les travailleurs qui occupent plusieurs emplois connaissent une plus grande mobilité que la majorité des travailleurs qui ont un cheminement de carrière traditionnel. En contraste, la fréquence des mouvements n'influence pas la probabilité de devenir travailleur autonome. Il existe deux explications possibles pour cette situation. D'abord, de nombreux travailleurs autonomes peuvent avoir été dans des situations d'emplois très stables avant l'étude; cette possibilité devrait être explorée. En outre, on devrait garder à l'esprit que les travailleurs autonomes ne changent pas d'emploi fréquemment, le changement concerne surtout la clientèle.

En dernier lieu, pour ces deux formes d'emplois non conventionnels, il est clair que les expériences hiérarchiques ne sont pas prédominantes, ce qui témoigne d'une caractéristique fondamentale des nouvelles carrières (Arthur et Rousseau, 1996; Bailly et al., 1998; Hall, 1996). Les études sur le plafonnement des carrières (Tremblay, 1995) ont démontré comment le concept de carrière traditionnelle est de plus en plus érodé par les mécanismes de blocage individuels ou structurels.

En ce qui a trait aux variables individuelles, seul le sexe des répondants exerce une influence significative. À vrai dire, nos résultats pointent dans la direction attendue. Le sexe des répondants n'influence pas la probabilité de cumuler les emplois. De plus, les résultats obtenus en regard du travail autonome sont compatibles avec la documentation spécialisée (Matthews et Moser, 1995) à l'effet que les hommes sont plus susceptibles d'être travailleurs autonomes que les femmes. Ces résultats suggèrent que dans un contexte d'emploi atypique, la répartition dans les catégories professionnelles perpétue apparemment les stéréotypes associés aux emplois traditionnels. Par exemple, on retrouve les travailleurs autonomes masculins surtout chez les professionnels et les gestionnaires, tandis que les femmes prédominent dans les emplois de secrétariat et de bureau, un modèle qui reproduit dans les emplois atypiques les mêmes stéréotypes sexuels qu'on trouve dans les emplois traditionnels (Maler et Milkovich, 2000). En outre, ces résultats confirment ceux de Carr (1996), qui démontrent clairement que les hommes et les femmes n'occupent pas des emplois atypiques pour les mêmes raisons ni aux mêmes âges.

Après une analyse de différenciation entre les personnes cumulant les emplois et les travailleurs autonomes, nous affirmons que ces deux formes d'emplois atypiques diffèrent. Malgré des similitudes entre ces deux types de travail non conventionnel, il est assez évident que les familles ne sont aucunement des groupes homogènes. De plus, la différenciation des familles au sein des groupes de travailleurs autonomes et de ceux qui cumulent les emplois met en lumière l'influence discriminatoire de la scolarité. Nos résultats montrent que plus la scolarité des répondants est élevée, plus ils sont susceptibles d'appartenir à la famille des *stars* ou des *conquérants*, un résultat qui corrobore les conclusions de plusieurs chercheurs (Carr, 1996; Jurik, 1998). En conséquence, même si la tendance est plus nette pour les *stars*, les personnes qui occupent plusieurs emplois et les travailleurs autonomes suivent le même modèle logique que les travailleurs conventionnels : l'éducation engendre manifestement de meilleures conditions de vie. Le revenu annuel des *stars* et des *conquérants* est de loin supérieur au revenu moyen. Néanmoins, un revenu plus élevé est souvent associé à des semaines de travail beaucoup plus longues. Les femmes sont surreprésentées parmi les *insécures* et

les *victimes,* ce qui tend à indiquer qu'elles n'occupent pas des places de choix au sein de la main-d'œuvre atypique.

Conclusion

Les résultats de cette étude clarifient le rôle de certaines variables organisationnelles et individuelles dans la probabilité de devenir un travailleur qui cumule les emplois ou autonome. Huit des douze secteurs d'activité influencent cette probabilité pour les travailleurs autonomes. En ce qui a trait aux secteurs déterminants, nous avons observé que la probabilité de devenir travailleur autonome diminue de 86,1 % chez les répondants qui travaillent dans l'administration publique, ce qui confirme le manque d'importance accordée à ce type d'emploi dans l'appareil gouvernemental. La variable secteur a néanmoins un effet plus mitigé sur le cumul d'emplois, parce que seulement deux secteurs d'activité influencent la probabilité de cumuler les emplois. En général, nos résultats montrent clairement que le secteur de la construction se caractérise par une recherche constante de flexibilité externe, ce secteur étant le seul qui influence positivement la probabilité de joindre un des groupes atypiques étudiés.

En termes de facteurs liés à la carrière, la mobilité ascendante joue un rôle unique. Cet effet, homogène pour les travailleurs autonomes et ceux qui cumulent les emplois, se manifeste de manière significative quant à la probabilité de s'engager dans l'une ou l'autre de ces formes atypiques d'emplois. Le fait d'être promu cinq ans avant l'enquête réduit donc substantiellement les chances d'appartenir à l'une de ces deux catégories d'emplois atypiques étudiés, tandis que la mobilité non ascendante n'augmente que la probabilité d'occuper plusieurs emplois. En outre, pour les individus qui occupaient des postes de cadres supérieurs ou intermédiaires cinq ans avant l'enquête, la probabilité est considérablement plus faible de cumuler les emplois ou d'être travailleur autonome, ce qui confirme l'impact persistant des cheminements de carrière plus traditionnels sur les catégories professionnelles de statut hiérarchique élevé. En conséquence, nous pouvons considérer que les individus en situation de blocage de cheminement traditionnel peuvent être enclins à adopter ces formes d'emplois atypiques de manière à satisfaire leurs attentes au-delà des promotions et du statut financier.

En dernier lieu, excepté le fait que les hommes sont surreprésentés dans la catégorie des travailleurs autonomes et que la probabilité qu'ils occupent cet emploi atypique est plus forte, le sexe n'a pas d'influence sur le cumul d'emploi. Il est intéressant de mentionner que ces deux formes d'emplois atypiques sont subdivisées en familles qui ne sont pas homogènes en termes de revenu annuel, de niveau de scolarité, d'heures travaillées et de moyenne d'âge. De plus, les femmes prévalent largement dans les familles qui comportent le plus d'emplois précaires et de conditions de vie précaires. Néanmoins, des différences importantes existent au sein des familles des travailleurs autonomes et des personnes qui cumulent les emplois, et la prudence est de mise pour éviter l'appariement indiscriminé des concepts de ce qui est atypique et précaire. En conclusion, bien que la précarité soit en fait bien présente, ce n'est pas un déterminant de l'emploi atypique.

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A Model for the Education of Career Practitioners in Canada

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Abstract

Most professions dictate the educational levels needed, first to access and then to advance within them. That is not the case for the relatively young field of career development in Canada, where such requirements are absent everywhere but in the Province of Québec. The following article presents an educational framework developed through a Canada-wide consultative process that proposed educational benchmarks for various scopes of career development practice. Five core functions were identified and defined: *career advising, career educating, career counselling, career coaching,* and *career consulting*. Moreover, several leadership functions integral to the field's performance and advancement were identified: *innovation, education, supervision of practice, systemic change,* and *management*. Ultimately, the framework will help promote quality of service, professional identity, and professionalism in the career development field. Recommended next steps include generating a well-integrated curriculum map to promote program and individual practitioner development.

Introduction

Most professions dictate the educational levels required to access and those necessary to advance within them. However, with the exception of the province of Québec there are no provincial or territorial standards determining the levels of education associated with different scopes of practice within the relatively young field of career development in Canada. Neither are there clear boundaries demarcating which services fall within its domain, thus inconsistency reigns. Few career practitioners identify primarily with the career development profession (Kalbfleisch & Burwell, 2007), and even fewer have career development-specific education. Though Canada is recognized as a world leader in career development, these issues together raise concerns about quality of service, consumer protection, and professionalism across the field. There is growing interest, in Canada and elsewhere, to establish educational standards (Borgen & Hiebert, 2002; Furbish, 2003; McCarthy, 2004; Niles, Engels & Lenz, 2009), as was effectively delineated by Niles et al. (2009) in their recent publication, "Training Career Practitioners." For instance, they propose therein that such measures might enhance each country's ability to design the increasingly sophisticated workforce analyses, policies, and interventions necessary to service the modern work dynamic.

In October 2006, 22* career development leaders and educators from across the country met in Montréal to discuss and organize their ideas about the educational background required for entry into, and advancement within, the field (Burwell & Kalbfleisch, 2007). A defining feature of the Montréal draft model was its recognition and articulation of the various distinct functions inherent to this multi-sectoral field. Once those were identified, they were grouped according to their ideal type and level of required education – whether that be a certificate, diploma, or undergraduate/graduate degree. The resulting model suggested that not all practitioners needed the same type or amount of training to perform each function competently.

While this preliminary model made great strides toward defining the educational requirements of the field's various functions, all acknowledged that it required further clarification, elaboration, and refinement from career development professionals in order to gain legitimacy and the potential for adoption. This elaborated model reflects the myriad of sectors in which career development work is currently practiced even as it accounted for the vast regional and economic differences influencing how career development practitioners work in Canada.
With further funding from the Canadian Education and Research Institute for Counselling, co-researchers Rebecca Burwell and Sharon Kalbfleisch gathered a second group of career development leaders, educators, and practitioners to revise the model's breadth, scope, and specifics in October, 2008. The resulting framework was then taken to a larger, consultative group of career development leaders early in 2009. A country-wide advisory group comprised of Mildred Cahill, Jeanette Hung, Nathalie Perreault, Geoff Peruniak, and Mark Venning oversaw this year-long (2008–2009) process. This article outlines that validation process and presents the resulting framework.

Methods

Stage One: October 2008 Meeting

In October 2008, 12 career development leaders, educators, and trainers representing colleges, universities, and non-formal learning programs from across the country met in Toronto to further develop and refine the Montréal model and prepare for wider dissemination. The Toronto group's key three goals were: to discuss

and solidify, and then to describe those aspects of the career development field that would be included; to review the wide variety of formal and non-formal Canadian training programs, considering how best to reflect each within the model; and to determine how best to graphically represent the resulting concepts and relationships

End State Goal – Framework vs. Model. The term 'model' was coined in Montreal to describe the final configuration of ideas describing each category of career development work and its respective educational requirement. However, it was determined in Toronto that an educational 'framework' is the more accurate end goal. A model is a type of conceptual framework that serves to predict how A and B are connected, often via quantitative research methods; whereas this is a qualitative study seeking to classify, and identify ideals in, the career development field, better labelled a descriptive conceptual framework (Shields, 1998).

Framework Principles. The following principles guided the refined educational framework's development:

- Multiple service providers' work overlaps with that of the career practitioner (e.g., community developers, social workers), but the main focus is to provide a clear career pathway for career practitioners;
- The framework represents the field's ideal future, not necessarily its present;
- It includes a balance of viewpoints from the field and maintains inclusivity across its various sectors as it evolves, recognizing the value of all roles and functions in the field and the important contribution each makes. Functions may require different levels of education, but all are valued;
- Functions identified in the framework are fluid, but for educational purposes, they can/should be considered separately;
- Involving multiple levels of intervention regarding serving individuals, organizations, and social systems is encouraged; and
- Comprehensive, vetted lists of core competencies are already established for the career development field; thus, this framework will not depict them, though it does assume that certain skills, knowledge, and attitudes underpin the success of career practitioners performing core functions.

Stage Two: Survey Response and Key Informant Interviews Across Canada

The authors validated the proposed educational framework, with assistance from the University of Waterloo's Survey Research Centre, among stakeholders country-wide – employers, practitioners, leaders, educators. Fifty-one of the fifty-three individuals approached completed a standardized survey and provided follow-up interviews. Of these, 67% had more than 10 years' experience in the career development field; 29% had over 20.

These key informants were given background information on how the framework was developed and then invited to critique it and report on its face validity. Specifically, they were asked to respond to a standardized set of questions about its clarity and how well it reflected the various forms of career development work performed across Canada's many regions and applied settings. They were also asked to comment regarding its potential impact on Canadian hiring practices, as well as the benefits of, and challenges to, its acceptance and adoption.

Stage Three: Final Integration and Analysis of Key Informants' Suggestions

The authors analyzed key informants' various suggestions for, and reactions to, the educational framework. These were then integrated, where possible, into the framework. With the advisory group's guidance, they analyzed suggestions for change, developing definitions and graphics to address them.

Results and Discussion

A Revised Framework for the Education of Career Practitioners

Figure 1 depicts the current educational framework for career practitioners. The graphic depicts the ideal (as per its guiding principles), recognizing that many practitioners currently have no career development-specific education.

Core Functions. At the heart of the framework are five core functions: *career advising, career educating, career counselling, career coaching,* and *career consulting,* the word "career" being included before each to distinguish between core functions and each word's broader definitions. Core functions were identified as the main activities of career practitioners working directly with clients on career or employment matters. Each function is neither a job title nor a job description; rather, any particular field position is likely to encompass responsibilities linked to multiple functions (e.g., an employment advisor in an employment resource centre might advise ***and*** educate). Practitioners performing any one, or combination, of the core functions listed in Table 1 might specialize in:

- addressing the distinct service delivery needs of specific populations (e.g., vocational rehabilitation of individuals with disabilities; mentoring programs for internationally trained professionals);
- focusing on employment- and/or career-related content domains; and/or
- offering professional services (e.g., job development, outplacement, psychometric assessments).

The graphic's shading indicates the extent to which each level of education ideally prepares a career practitioner to perform each core function. For example, the degrees of shading across the five core functions at Level 2 Education indicate that a career practitioner holding this level of training would be: well prepared to advise and educate; less prepared to coach and consult; and not adequately trained to counsel. Nonetheless, a practitioner with Level 2 Education could play a

Figure 1

A Framework for the Education of Career Practitioners in Canada

This framework identifies and defines the main functions of the field and illustrates the ideal educational background required to perform each one; its long-term purpose is to provide an educational guide for individuals and institutions to enhance professional practice.

Core Functions

Reflect the principal activities of career practitioners working directly with clients in one-to-one or group settings; the degree of shading indicates to what extent each level of education prepares a career practitioner to perform each of the core functions.

Education	Career Advising	Career Educating	Career Counselling	Career Coaching	Career Consulting
Level 1 College or University Certificate* (without diploma or degree)					
Level 2 Diploma or Undergraduate Degree plus College or University Certificate* Undergraduate Degree* (offered only in Quebec)					
Level 3 Masters Degree * Post-Masters Certificate * Ph.D. *					

Leadership Functions

Serve to support, inform, and advance the field of career development.

Innovation	Education	Supervision of Practice	Management	Systemic Change

* Career development specific

Important notes:

- Practitioners working within any one or combination of the core functions may specialize in one or several of the following:
  - addressing the distinct service delivery needs of specific populations (e.g., vocational rehabilitation of individuals with disabilities, mentoring programs for internationally trained professionals);
  - focusing on employment- and/or career-related content domains; and
  - offering particular professional services (e.g., job development, psychometric assessment, and outplacement).
- None of the functions listed above are actual job titles. Any particular position in the field might be comprised of multiple functions.
- Core competencies (e.g., diversity, advocacy, ethics, research and evaluation, needs assessment) are assumed components of all functions. Comprehensive, vetted lists of core competencies for career practitioners have been outlined elsewhere.
- This framework depicts the ideal even as it recognizes that many current practitioners work in the field without completing career development specific education.
- There are many non-formal training programs within the field of career development. These could be connected to formal educational programs through equivalency mechanisms such as PLAR.

Table 1. Core Function Definitions

Advise	Career Advising is, first and foremost, information-centred, providing information regarding topics and technology related to investigating employment, career development, education, and/or training options. Such material is usually supplied on request or as part of a general customer orientation to available employment or career services – it is not personalized enough to require the collection of in-depth, confidential client information.	Advising may include some or all of the following: – helping individuals learn about and/or use technology such as online company directories, email, RSS feeds, social networking sites, résumé templates, and occupational/career information databases and directories; – directing clients to work-related resources associated with topics such as labour market information, interviews, résumés, networking, branding, internship/volunteer opportunities, training fund opportunities, and government assistance programs; – collecting basic employment histories to document suitability for varied assistance and/or services – for example, workshops and individual programs; – promoting career development organizations: staffing job fair/information session booths; – creating professional, well-resourced environments to support individuals' ongoing quest for employment/career solutions; and – orienting clients to various services offered by career/employment centres – workshops, etc.
Educate	Career Educating provides information or psycho-educational services tailored to clients' unique career/employment needs. Such guidance primarily addresses the realm of work and is developmental, rather than remedial in nature. Career Educating activities typically require in-depth investigation/assessment of clients' current employment – for example, perception of their current circumstance, readiness for change, strengths, barriers, and other contextual variables. Activities focus upon developing clients' capabilities and understanding within the realms of job searching, career development, and work maintenance.	Educating may include some or all of the following: – collaboratively helping clients clarify strengths, skills, values, characteristics, and other contextual variables using formal and informal assessments – and moving from these toward identifying employment/career goals; – teaching clients about the modern work world; – helping identify, synthesize, and interpret micro- and macro-labour markets and information regarding trends relevant to clients' existing and potential employment status/career directions; – teaching principles/strategies of effective job searching, occupational research, branding and self-promotion, networking, interviewing, decision-making, work maintenance, and career management; and – facilitating experiential learning opportunities.
Counsel	Career Counselling involves a formal relationship encompassing holistic, remedial, and therapeutic efforts to help individuals identify, understand, and adapt to work/life decisions, roles, and circumstances across the lifespan.	Counselling may include some or all of the following, often offered one-on-one: – supporting individuals coping with job stress or job loss; – guiding clients toward uncovering, specifying, and resolving mental health issues affecting personal and professional functioning (Brain, 2002); – helping develop holistic work/life development or employment action plans; and – providing opportunities to develop/practice personal management skills such as decision-making, anger management, or assertiveness training.

Table 1. Core Function Definitions cont'd.

Coach	Career Coaching involves contracting with clients to work co-actively, on an ongoing or extended basis, toward achieving specific, measurable results in their work lives. This developmental, rather than remedial, practice is future-oriented, focusing on accomplishments and action rather than seeking insights into root causes (Brain, 2002).	Coaching may include some or all of the following, often delivered one-on-one via phone, email, and (to a lesser extent) in-person communications: – helping set clear goals related to work performance improvement, career development, or job searching; – collaboratively creating concrete action plans for how best to move toward identified goals in a manner suited to the client's situation; and – asking questions to prompt problem-solving and help clients identify and decide upon solutions. It should be noted that many aspects of these coaching activities are also often present in career educating and career counselling activities. However, since coaching is more and more commonly practiced as a stand-alone pursuit, it is covered separately here.
Consult	Career Consulting involves the design, delivery, and evaluation of a wide possibility of career development initiatives within organizations, including those related to job placement, career/talent development, or downsizing /restructuring plans.	Examples of consulting activities include: – conducting needs analyses and identifying best practices for units/systems within organizations; – developing and/or evaluating tailored material (workshops/courses/programs) to build/enhance career and employment organizations' professional capacity, skill-base, or offerings; and – developing and/or evaluating specifically tailored curriculum to build career awareness in diverse populations – for example, grade 8 students in an Inuit community.

significant 'helping' role, and could responsibly engage in active listening, empathy, and/or reframing. These abilities should not, however, be mistaken for the ability to provide therapeutic counselling.

Changes to the 2006 Montréal Model. *Advising*, *guidance,* and *counselling* were identified as key career development functions (labelled 'services' in the initial Montréal model), based on Borgen and Hiebert's research (2002, 2006); over 90% of key informants supported the subsequent addition of *career coaching* and *career consulting* – each constitutes an important, distinct activity within the field that is otherwise not adequately addressed. Fifty-eight percent believed *career guidance* should be changed to *career educating*, given the strong historical association of the original term, in English-speaking Canada, with the guidance counselling provided in high schools.

Leadership Functions. A list of leadership functions that may individually or collectively comprise a significant portion of the daily activities of important players in the career development field follows the framework's five core functions. *Innovation, education, supervision of practice, systemic change,* and *management* augment the reach, effectiveness, and efficacy of employment and career development efforts within society at large without necessarily involving direct interaction with the individuals/organizations accessing such services.

Leadership Functions Defined. *Innovation is* the creative design of, or improvement upon, programs, curricula, products, standards, or organizational structures/activities.

Education is training career practitioners to impart and develop knowledge or skills; career development instructors, facilitators, teachers, and professors work in both formal post-secondary and non-formal settings.

Supervision of Practice is the oversight of career practitioners' professional performance. Such activities are "interpersonal exchanges" consisting of both structured and informal activities to monitor practice; conduct joint problem-solving; provide clear, constructive feedback; link theory with practice; and facilitate/guide reflection, growth, and professional development (Kilminster & Jolly, 2000). Whatever the training level in any given field, an organization's professional practices are only as good as its oversight.

Systemic Change transforms approaches, behaviours, programs, or policies related to employment, training, or career development at the macro and/or micro level, including sharing research, consulting government leaders regarding unintended consequences of a program's eligibility criteria, or strategically planning ways to facilitate access to career planning services for under-served populations.

Management conducts/oversees administrative activities related to

hiring, coordinating, and mentoring staff; budgeting; strategic planning; marketing; contract negotiation; and the flow and handling of information, resources, and operations.

Core Competencies and Curriculum. The developers of this framework subscribe to pre-existing comprehensive standards regarding a number of skills, areas of knowledge, and attitudes comprising this field's core competencies (e.g., diversity, advocacy, ethics, research and evaluation, needs assessment) that are key to career practitioners' successful execution of core functions. They are not depicted in this graphic because how core competencies and core functions are synthesized to develop curriculum is the purview of academic institutions. Though beyond the scope of the current project, the authors believe that articulating the appropriate curriculum for each function is the next logical step in this educational framework's development.

Framework Benefits

The Toronto group and key informants identified specific benefits that an educational framework offers the multi-sectoral, career development field.

Increased Consumer Education and Confidence. The public would learn where to look for employment related assistance and what to expect from it, thus highlighting its importance and raising consumer awareness.

Enhanced Professional Identity. An educational framework could go far toward declaring to the public, related professions, and career development program funders that the field is a serious one requiring investment. Ninety-two per cent of key informants agree that the framework could enhance the field's professional identity.

Promotion of Professionalism. An educational framework outlines the professional boundaries associated with each education/training level, thereby supporting professional excellence and the delivery of high quality services; 90% of key informants indicate it could both "assist practitioners to be cognizant of the boundaries of their level of training," and facilitate their own career planning. From a hiring perspective, 24% suggest the framework would help employers write job descriptions and specify educational requirements. Should the framework also encourage developing more training options, 84% indicate that introducing an undergraduate degree in career development would benefit the field; 80% suggest a Master's degree would do the same.

Framework Chalenges

Creating an educational framework and having it accepted and adopted by the field entails many varied challenges.

Language Barriers. The framework must first overcome the lack of a common, unified language amongst career practitioners and leaders. It must use terms with longstanding, common usages in French and English that may complicate efforts to standardize educational preparation. No such effort will satisfy every person or situation.

Economic/Political/Regional Factors. Vast differences influence how career education and services are delivered across Canada. Forty-one percent of key informants identify the political and funding landscape of the multi-sectoral career development field as inhospitable to the framework's widespread acceptance/adoption; administrators, employers, and funders may not necessarily appreciate the level of professionalism required to perform high quality career development work. Some ponder whether there are sufficient pay-scale increases available to monetarily reward the framework's recommended educational investments.

Some key informants noted the framework's impact on hiring practices, and thus the field, depends on whether it is supported by legislation and/or regulation; provincial mandates for professional certification/designation (as opposed to optional endorsements) are often precursors to substantial change. Informants identified three factors impacting the likelihood of future provincial mandates. First, career development employees work within different (perceived or actual) professional contexts, thus many different employer and occupational groups would be affected. Secondly, each province is at a different stage of interest and preparedness for moving toward standardization. For instance, Québec's longstanding professional designation for Career Counsellors is unique. Meanwhile, other provinces and territories may envision a different pace and/or different target outcomes. Finally, local economic realities will inevitably modify the framework's impact somewhat (e.g., skills shortages influence hiring practices in economically challenged areas/times). Rural communities, particularly, may have limited to non-existent access to well-trained career development professionals.

Practitioners and leaders from across Canada contributed unique viewpoints to develop a framework marrying the various frames of reference listed above, but there will surely be ongoing differences in how it is applied across settings. It has been suggested that the framework could bolster funding requests to fill any training voids identified, but that regional, political, and economic differences are unavoidable and, in fact, appropriate.

Prevalence of Non-formal Training. The Toronto working group discussed the enormous number of non-formal training programs offered in this field at great length with respect to how, if at all, they fit into the framework. People enter the field with varied educational backgrounds, frequently obtaining career-specific training informally via programs that are neither graded nor academically credentialed. Anecdotal evidence suggests that non-formal programs play a major role in current career development training: some target practitioners new to the field; others offer courses similar to professional enhancement; still others serve specific communities, such as the Aboriginal Human Resource Council's Guiding Circles program.

Given its prevalence, 67% of key informants propose non-formal training be acknowledged somehow within the educational framework, possibly by using equivalency mechanisms to link formal with non-formal training. Prior Learning Assessment Recognition (PLAR), for example, is "a process and a series of tools that assist adults in reflecting upon, articulating, and

demonstrating learning for the purpose of having it measured, compared to some standard, and in some way acknowledged by a credentialing body" (Sargent, 1999, p. 28). Establishing formal agreements between training and education institutions to recognize specific non-formal training programs using formal school credits offers another possible educational link. Only 20% support placing non-formal training programs *directly* into the framework without requiring such equivalency processes or linkages. Meanwhile, more informants (29%) emphatically support rooting the standards in formal education and classifying non-formal training as professional development or continuing education unless linked to a formal program via PLAR.

The content and quality of non-formal training programs differ so much that formally 'attaching' them to the framework in the early stages would be prohibitive. Ultimately, it seems prudent to begin by classifying non-formal training as a basis for continuing education, rather than as a formal method of entering the field. Non-formal integration can be initiated once formal routes have been established.

Framework Relevance. Because this young helping profession was built largely on non-formal foundations, its perceived relevance to best practices presents another potential barrier to acceptance. For years, no Canadian educational programs offered formal training outside Québec, thus governments and employers developed on-the-job training systems and programs. These adaptable, innovative organizations created solutions that, by all accounts, continue to bring international acclaim to Canada's career development field, but almost all key informants confirmed the need for an educational framework (though 12% recognized the inherent challenge of communicating how it would facilitate performance excellence to practitioners, employers, and the public).

Relevance can be discussed at both the systemic and individual levels. Two recent publications expertly address the systems angle. Niles et al. (2009) note that the changing nature of work increasingly requires us to make significant investments in career practitioners' education and continuous learning, on topics as diverse as technological innovation, global markets, *contingent work,* and cultural mores. They advocate moving toward training program accreditation standards to help establish a sophisticated baseline level of understanding amongst career practitioners, thereby allowing each country to optimize its labour market potential. Those authors also indicate that career practitioners themselves are best positioned to design and improve upon both effective career interventions and policies to enhance their reach but that career practitioners must first be well-educated in policy development and advocacy processes appropriate for their specific communities and cultures (Niles et al., 2009; Arthur, Collins & Marshall, 2009). Currently there is little focus on such macro issues in Canadian career development curriculum (Arthur et al., 2009), thus one of the educational framework's significant contributions to best practices is moving the field toward promoting social justice and systemic change.

At the individual level, we also expect practitioners and their clients to benefit from a standardized educational approach, as career development-specific education helps practitioners understand past and emerging contextual forces in order to make sound, day-to-day inferences about their clients. Social Psychology literature regarding attribution theory accurately assesses the extent to which behaviours are attributable to an individual's personality versus situational factors (Gilbert & Malone, 1995). It seems reasonable to expect that practitioners' sophisticated understanding and full awareness of the various social and environmental factors influencing their clients and practitioners' capacity to anticipate, recognize, and analyse possible effects can only be enhanced through formal education. Further, one key informant noted that taking even one Career Practitioner course improved employees' counselling skills and knowledge base, as expected, but the informant also noted "greater confidence – as if they have more faith in their own professional competencies" (J. Kutcher, personal communication, July 30, 2009). The educational framework thus enhances best practices in both group and individual settings.

Bridging Levels of Formal Training. The arena of formal career development training and education lacks consistency and interrelatedness, with no agreement on the content or length of certificates, diplomas, and degrees, and no logical progression from one training level to the next. Certification programmes, particularly, range from four courses to over ten, and practicum requirements vary immensely.

Training inconsistencies were seen to limit the framework's acceptance and adoption, as was the fact that the framework requires some within-program changes – some credentials may not offer sufficient employment growth options. For example, post-graduate certificate programs may simply be too limited to be valuable in the career development marketplace if there is low demand for career advising skills in isolation.

Some key informants believe Canadian educational programs must increase numerically and align themselves with the framework before widespread hiring changes can be expected, expressing hope for a cross-program forum to explore these matters.

Managing Change. Finally, the fact that large numbers of employed practitioners do not meet the framework's ideal educational standards to perform these core functions is a major challenge to acceptance. A PLAR or grandfathering mechanism must be part of a future-oriented framework to avoid disenfranchising or threatening current practitioners. In this evolving and transformational field, individuals who lack the proposed ideal education but who can offer other, equally valuable educational and experiential backgrounds must not be excluded. Communicating the framework will need to account for this factor.

Conclusions and Next Steps

The Toronto and key informant groups were expanded to include the formal *and* non-formal training sectors to ensure field-wide representation. The subsequent refinement and enhancement

of the original 2006 Montréal educational model resulted in a broader, more inclusive framework. It incorporated two new functions – coaching and consulting – to bridge the gap between the diversity of roles career practitioners perform, as well as leadership activities emphasizing the importance of clinical supervision and capacity building that are central to the efficacy and direction of the field: innovation, education, supervision of practice, systemic change, and management. The revised educational framework reflects the importance of moving toward macro topics related to encouraging systemic understanding and change (Niles et al, 2009; Arthur et al., 2009; Burwell & Kalbfleisch, 2007), an area that had previously been neglected, as most career development education programs focus primarily on individual change.

The enhanced framework examines and builds bridges between existing levels of education and training in career development. It also incorporates the contexts within which career development work is done – with individuals, within organizations, and/or in efforts to affect systems.

The expected benefits of the framework include:

- promoting professionalism and best practices in the field;
- educating consumers and funders; and
- helping career practitioners design and develop their own career paths.

These features together foster professionalism and render this field more attractive to the younger aspiring professionals needed to take the place of the many seasoned practitioners slated to retire over the next ten years.

Perceived challenges to the framework's adoption include:

- lack of a unified language for the core work done by career practitioners;
- the prevalence of non-formally trained practitioners outside Québec;
- the possibility that various stakeholders will resist change;
- the potential necessity to promote widely how education builds upon best practices;
- vast differences between formal training programs that do not connect with each other for career laddering purposes; and
- the existence of regional, political, and economic variables that may confound the framework's application in different Canadian settings.

Given these potential benefits and challenges, the framework's impact and adoption will benefit greatly from a strategic education and marketing campaign expressing the framework's potential benefits to all stakeholders. The methods selected for its communication will clearly be important in order for it to become a significant tool for the field.

Mapping the connection between the core functions proposed and the core competencies identified by Canadian and international bodies will one day generate a well-integrated curriculum map that promotes training programs, individual practitioner development and, ultimately, creative and effective career interventions. Initiating a cross-post-secondary-program discussion forum would be a logical next step.

We thank the educators and trainers participating in the Toronto meeting for their enthusiastic support of, and significant contribution to, the creation of the enhanced and expanded framework. Thanks also to CERIC for its continued commitment to this research and ongoing financial support. Finally, we would like to recognize the significant efforts of the advisory committee members in making this project possible.

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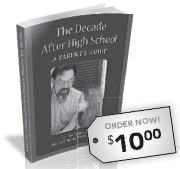

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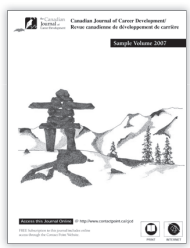

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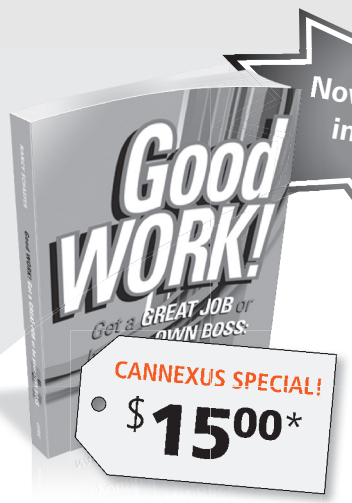
Get a Great JOB or be your OWN BOSS: a young person's guide

— by Nancy Schaefer



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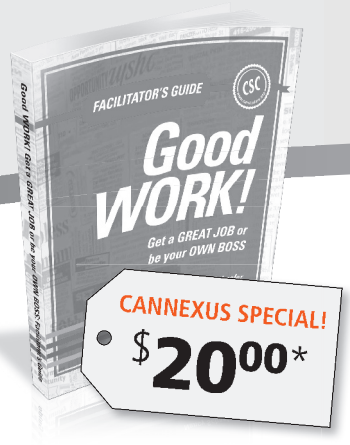

Good WORK! Get a Great Job or be your Own Boss: A Young Person's Guide is a partnership between CERIC and Youth Employment Services Toronto (YES), a non-profit organization that has helped over 60,000 youth to successfully enter the workforce or start a business.

"Not only has Nancy Schaefer created an impressive compendium of essential work search/entrepreneurial information and processes, but but she has done so using refreshingly plain and direct language that young people, or anyone for that matter, can connect with easily. For youth struggling to find their place in an ever-changing and increasingly complex labour market Good WORK! Simply makes sense."

— Paula Pothier, Applied Career Transitions (ACT) Project Coordinator, University of Victoria

Author Nancy Schaefer, President of YES, worked with many former graduates of YES services to assem-ble the wealth of valuable information and advice found in this book. The guide gives readers a first hand appreciation of what youth face in finding work as well as being a valuable resource for those in the career, counselling and employment fields.

Nancy has been a tireless advocate for youth employment and entrepreneurship for more than 16 years and appears frequently in the media to remind the public of the important role young people play in our workplaces, our communities, and the economy.

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Guide à l'intention des jeunes pour obtenir l'emploi de ses rêves our démarrer son entreprise

Écrit grâce à la contribution de spécialistes de l'emploi et du monde des affaires ainsi que de jeunes comme vous, ***Un travail pour moi!*** vous propose de nombreuses astuces, des conseils et des erreurs à éviter, des listes de vérification et des foires aux questions. Vous avez en main de quoi prouver qu'être jeune est un atout.

Nancy Schaefer est la présidente de Services d'emploi des jeunes (Youth Employment Services –YES), organisme sans but lucratif qui a aidé plus de 60 000 jeunes à trouver leur premier emploi ou à démarrer leur enterprise. Nancy travaille sans relâche depuis plus de 16 ans à promouvoir l'emploi des jeunes et la création d'enterprises par des jeunes. Elle s'exprime régulièrement dans les médias afin de rappeler au public l'imortance du rôle que jouent les jeunes dans nos milieux de travail et nos collectivités, ainsi que dans l'économie. Nancy enseigne à titre bénévole le yoga et la méditation à des détenus dans des organismes correctionnels.

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This Journal was made possible through the generous contributions of The Counselling Foundation of Canada, The Canadian Education and Research Institute for Counselling and Memorial University of Newfoundland.

Cette Revue est rendue possible grâce aux généreuses contributions de The Counselling Foundation of Canada, du Canadian Education and Research Institute for Counselling et de l'Université Memorial de Terre-Neuve

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