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Adolescents**

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Gender differences for optimism, self-esteem, expectations and goals  
in predicting career planning and exploration in adolescents

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**Abstract**

An Australian sample ( $N = 467$ ) of high school students was administered scales tapping optimism, self-esteem, career expectations, career goals, career planning and career exploration. The study tested a career mediational model based on social cognitive career theory (SCCT) and cognitive-motivational-relational theory (CMR). It was hypothesised that the stable person inputs of optimism and self-esteem would predict career planning and career exploration through the variables of career expectations and career goals differentially for young males and females. For males, optimism and self-esteem influenced career expectations, sequentially predicting career goals, career planning and career exploration. A different pathway was identified for females, with optimism directly influencing career goals, which subsequently predicted career planning and career exploration. Self-esteem predicted career expectations, which then directly influenced career planning and career exploration by bypassing career goals. Results are discussed in the context of SCCT and CMR.

**Keywords:** social cognitive career theory, cognitive-motivational-relational theory, optimism, self-esteem, career expectations, career goals, career planning, career exploration, career maturity, locus of control

Understanding the career development process across the lifespan has been a significant focus of the career and vocational literature. Several theories have attempted to identify the salient aspects concerning career maturity and the development of a world of work focus. These career theory formulations have been grouped into theories of content, process and content/process (Patton & McMahon, 1999). Content focuses on aspects that shape career development, such as characteristics of the individual and the context, while process reflects the progression and changes that occur in career development across time. Several authors have recognised the necessity for theory to integrate the content and context of the individual with the process, together with their development and interaction. Models based on social learning theory, more recently conceptualised as social cognitive theory (Bandura, 1986), such as the learning theory of Mitchell and Krumboltz (1990, 1996) and the social cognitive career perspective of Lent, Brown, and Hackett (1996), have been adapted specifically to address career development (e.g., career maturity and decision-making) and the world of work. These theories have attempted to incorporate aspects of the individual, the context, their development and the interaction between these features.

Social cognitive career theory (SCCT) stems directly from social cognitive theory (Bandura, 1986), highlighting the importance of cognitive, self-regulatory and motivational processes that augment the fundamental issues of learning and conditioning. SCCT was developed with the explicit aim of comprehending the process through which “(a) academic and career interests develop, (b) interests, in concert with other variables, promote career relevant choices and (c) people attain varying levels of performance and persistence in their educational and career pursuits” (Lent & Brown, 1996, p. 311). Three cognitive mechanisms are emphasised within this framework, self-efficacy beliefs, outcome expectations, and goals. Both social learning theory and social cognitive career theory recognise the importance of individual differences (referred to as person inputs in SCCT), such as personal predispositions (e.g., self-esteem and optimism) and gender. These aspects are proposed to influence a person’s self-efficacy beliefs, outcome expectations and ultimately their action or behaviour. There is an emphasis within SCCT on the means by which individuals exercise personal agency. The current paper aims to investigate the influence of person inputs (such as self-esteem, optimism, and gender), career outcome expectations, and career goals on the career maturity variables of planning and exploration. Career maturity refers broadly to the individual’s readiness to make informed, age-appropriate career decisions and their ability to cope with career development tasks (Savickas, 1984).

### *Self-esteem, Optimism and Gender*

Self-esteem has frequently been examined within the career maturity and decision-making research, yet this aspect has received minimal focus within the framework of SCCT. Previous career literature (Gardner, 1981; Holland, 1985; Super, 1980) indicates that adolescents who score high on self-esteem have more lucid conceptions of themselves relative to career interests and career decision-making than students scoring low on self-esteem. Research within the stress and adaptation literature, utilizing adolescent samples, indicates that self-esteem acts as an “anxiety-buffer” with those with high self-esteem coping significantly better with stressful situations than those with low self-esteem (Elton, Burrows & Stanley, 1980; Greenberg, et al., 1992). Thus, individuals with a high self-esteem appear better equipped to manage the adaptational process of developing career interests and making career related decisions.

Very little research has investigated the role of optimism within the SCCT framework. Optimism is a generalised tendency to expect positive outcomes or the belief that “good rather than bad things will happen in a person’s life” (Scheier & Carver, 1993, p. 26). Optimism has been identified as performing a self-regulatory function within control theory, which postulates that as long as an individual’s expectancies of eventual success are sufficiently favourable they are likely to remain engaged in efforts to reach desired goals, despite adversities that may arise (Carver & Scheier, 1981). In regard to career development, control theory would argue that optimists are motivated to set career goals as they foresee favourable outcomes occurring and thus are stimulated to implement actions that will achieve these goals.

Lazarus’ (1991) cognitive-motivational-relational (CMR) theory of emotion also identifies the self-regulatory role of optimism and identifies self-esteem as a belief that moderates the person’s relationship to the environment by influencing appraisal and coping and thus potentially mitigating the damaging effects of stress and adaptation. The CMR theory provides a framework to understand adaptation to salient life events or stressful situations. Several authors have considered the career development process as an adaptational process requiring individuals to evaluate their situation, make decisions concerning work based on their interests, values and beliefs of oneself and the world, and then manage this ongoing process. The environmental aspects of this model include demands, constraints and resources, features that have been identified as relevant in the career development domain.

During an appraisal, an individual evaluates the importance and meaning (based on beliefs, goals and/or personal commitments) of an event or situation and responds at an emotional level if the event or situation is appraised as relevant. Optimism is referred to as an appraisal style within this framework as this predisposition can influence the way an individual thinks, feels and acts in a particular situation. For example, an individual with a tendency to expect that positive outcomes will occur is likely to participate in career related activities, set vocationally oriented goals, and respond with positive affect.

Creed, Patton and Bartrum (2002) examined the dimensionality of the Life Orientation Test-Revised (Scheier, Carver & Bridges, 1994) and the relationship of optimism and pessimism independently with career related variables (career maturity, career decision-making and goals) in a high school sample. These authors found that students with high levels of optimism showed higher levels of career planning and career exploration, were more decided about their career decision and had more career goals. On the other hand, those high in pessimism were found to have lower levels of career and decision making knowledge, were more indecisive and reported lower levels of school achievement. The findings suggested that optimism and pessimism might perform a functionary role in the development of high school students' career maturity and decision-making.

Petrone (2000) tested the construct of career maturity against the criterion measures of vocational identity, optimism for the future, and level of intelligence to assess convergent and discriminant validity with a sample of high school students. Females were found to score higher on measures of competency for career decision-making than males, whereas males scored higher on measures of vocational identity states and possessed a greater sense of optimism for the future. The author concluded that while males endorsed a more developed vocational identity and higher optimism for the future, females seemed more career mature and were better prepared to make a career choice. These findings are important as they suggest that there may be different trajectories or paths in the career development of females and males. Gender has been identified as an influential person input factor within the SCCT framework and as such indicates that there may be different pathways or trajectories concerning the career maturity and decision-making process for males and females.

Generally, the research relating gender differences to career maturity is contradictory and has been depicted as conflicting, inconsistent (Herr & Cramer, 1984) and as being less than adequate (Grotevant & Thorbecke, 1982). Naidoo (1998) identified that the research findings investigating gender and career maturity collapses into three categories: "(a) findings

indicating that females in high school score higher than males on career maturity inventories; (b) findings that males are attitudinally more career mature; and (c) those finding no differences between the sexes” (p. 5). There is extensive literature (see Patton & Loka, 2001) that suggests there are gender differences in career maturity. SCCT emphasizes the importance of examining gender and the differences that may exist across the career development process for males and females as a result of gender role socialization.

### *Outcome Expectations and Goals*

As viewed within the framework of social learning theory (Krumboltz, 1979; Rotter, 1966), outcome expectations refer to beliefs about the probable consequences of particular courses of actions. Hoover (2000) applied social learning theory to a study examining the influence of high school grade point average, college entry scores, self-efficacy, outcome expectations (operationalised as locus of control, with both general and college-specific locus of control being measured) and student grade expectations on college achievement. Hoover found that college specific locus of control was more strongly related to self-efficacy and academic success than general locus of control, which indicates the usefulness of examining context specific variables, such as career locus of control/outcome expectations rather than more general measures of the construct. Career locus of control focuses on the extent to which students believe they are in control of their decisions about their career path (Trice, Haire, & Elliot, 1989). People with an internal locus of control have greater success in managing their environments, are higher academic achievers, use information more productively, are less manipulated or coerced, and generally are better prepared to improve their situation through active striving than those who have an external locus (DeMello & Imms, 1999; Feather, 1967; Ferrari & Parker, 1992; Findley & Cooper, 1983; Lefcourt, 1966). As with Lazarus’ cognitive-motivational-relational theory of emotion, social learning theory incorporates social and cognitive influences, with a focus on personal agency and the construction of meaning. However, the social learning theory of Krumboltz proposes that the social and cognitive variables relate to each other causally.

With specific reference to career maturity and development, it has been demonstrated that a more internal locus of control is associated with increased maturity in career choices, planning ahead for career options and greater knowledge of self and general work attitudes (Gardner, 1981). Luzzo (1995) found that students with an internal career locus of control tend to display more mature attitudes toward career decision-making than students with an

external career locus of control. Meaningful associations between career maturity and several career development variables, including career decidedness, realistic occupational aspirations and expectations, higher career decision making self-efficacy, a more internal locus of control, and higher levels of career salience have been identified (Crites, 1997). These findings suggest that a person who believes that they are in control of the reinforcement sources in their life are likely to manage the career development process more successfully than those who do not. Thus, individuals with an internal locus of control are more likely to perceive the outcome of the goals they establish and achieve as being determined by their own actions and strivings. Goals refer to “one’s determination to engage in a given activity or to affect a particular outcome” (Lent, Hackett, & Brown, 1999, p. 47). People exercise personal control and agency through the implementation of goal setting (Lent, Brown, & Hackett, 1994). Thus, outcome expectations and goals are proposed to be essential variables that motivate and direct an individual in their vocational behaviour.

When applying SCCT to career maturity and decision-making, researchers have generally focused on portions of the theory, with a central focus on self-efficacy. Betz and Vuyten (1997) examined one part of the SCCT model by investigating the contribution of efficacy and outcome expectations in the understanding of career exploration intentions (goals) and career decision making in a university sample. Career decision-making efficacy expectations were related to career indecision, accounting for 19% (women) and 28% (men) of the variance, while career outcome expectations were related to intentions to explore careers, accounting for 25% (women) and 29% (men) of the variance.

More recently, Paa (2001) applied SCCT in a comprehensive manner to explore the influence of athletic participation on high school students’ career decisions. The variables included athletic commitment, teacher support, career commitment, career choice behaviours, career decision-making self-efficacy, athletic outcome expectations and career aspirations. Paa found that differences emerged within the sample concerning levels of career decision-making self-efficacy, career decision making outcome expectations and career commitment, and further that gender differences were based on the degree of athletic commitment, career decision making outcome expectations and career commitment. This study emphasizes the salience of examining males and females independently. Context specific measures were used in this study, also confirming the importance and relevance of applying context specific measures for the assessment of locus of control and goals.



SCCT is accruing extensive recognition and research concerning career decision-making and maturity. Yet, very few studies have investigated person inputs (such as optimism and self-esteem) and their influence on the SCCT variables of expectations and goals. Even fewer studies have examined these variables outside of a university setting.

### *Current Study*

Based on this review of the literature the current study aims to examine the relationships between self-esteem, dispositional optimism, outcome expectations (career locus of control), career goals to the career maturity variables of career planning and career exploration. Specifically, it is predicted that the person inputs (beliefs about oneself) of self-esteem and optimism will directly predict outcome expectations (career locus of control), as those students who foresee favourable outcomes and have a high-self-esteem will be more likely to have established interests and view themselves as being in control of the sources of reinforcement in their life. It is further predicted that outcome expectations will directly influence career goals in that those individuals who view themselves as active agents in the outcomes of the events in their life will be motivated to set goals. Thus, those individuals who are motivated and have set goals will be more likely to participate in career development behaviours such as career planning and career exploration. The hypothesis here is that career goals will directly relate to the career maturity variables of career planning and career exploration. There is sufficient evidence in the literature as to gender differences in career development; thus, it is expected that there will be different pathways for females and males concerning the determination of the behaviours of career planning and career exploration.

## **Method**

### *Participants*

Participants were 467 high school students attending Grades 8-12 at one Australian High School in southeastern Queensland. The school was suburban based in a medium sized city, and was established as middle level socioeconomic based on its location. There were no significant ethnic groupings, which reflect the broad cultural nature of the Australian population. Participants were drawn from a larger database (see Patton & Creed, 2001) and represented all students in these grades who fully completed the survey. There were 242 females (51.8%) and 225 males (48.2%). They ranged in age from 12.48-18.51 years ( $M =$

14.96,  $SD = 1.53$ ), with 151 students from Grade 8, 56 from Grade 9, 116 from Grade 10, 83 from Grade 11, and 71 from Grade 12.

### *Measures*

*Career Planning* and *Career Exploration* were two subscales from the Australian version of the Career Development Inventory (CDI-A: Lokan, 1984). The CDI-A is a 72-item scale designed for students in Years 8-12. It consists of four subscales of Career Planning, Career Exploration, World of Work Experience and Career Decision-Making. The latter two are not reported in this study. The 20-item Career Planning (CP) subscale measures the type and degree of career planning undertaken (e.g., “How much have you thought and planned about getting money to support yourself while you’re studying or training for a job”). The 16-item Career Exploration (CE) subscale measures the range and usefulness of career exploration undertaken (e.g., “Which of the following sources have already given you, or directed you to, helpful information for making your future plans?”, with options of family, teachers, friends, printed materials etc). Higher scores indicated more planning and more exploration respectively. Adequate reliability and validity data have been reported (Lokan), and represent similar psychometric properties to those reported for the American inventory (Pinkney & Bozik, 1994). Internal reliability coefficients calculated in the present study were .91 (CP) and .78 (CE).

*Career Goals.* A six-item scale (Mu, 1999) was used to measure the level of career related goal setting. Students were asked to indicate their agreement with each item (e.g., “I have a clear set of goals for my future”) on a 5-point scale with end points of “strongly agree” to “strongly disagree”. This gave a possible range of 6-30, with higher scores representing more career related goal setting. Mu reported preliminary validity data and an internal reliability of .92 with his sample of high school students. In the present study the internal reliability coefficient was .90.

*Career Expectations.* Expectations were represented by four items of career locus of control developed by Luzzo and Jenkins-Smith (1998). Responses to these questions (e.g., “If my career decisions lead to success, it will be because of my skills and abilities”) were indicated on a 5-point scale with end-points of “a little like me” to “a lot like me”. Scores were totaled to give a possible range of 4-20, with higher scores indicating more internal attributions. The internal reliability for this scale was .74.

*Optimism.* This attribution was measured using three items from the Life Orientation Test – Revised (LOT-R; Scheier et al., 1994). The LOT-R consists of six scale items, however, Creed et al. (2002) have indicated that three items tap optimism while three items tap pessimism. Responses to these questions (e.g., “I’m always optimistic about my future”) were indicated on a 4-point scale, using the response format, “strongly agree” to “strongly disagree”. This gave a possible range of 3-12, with higher scores indicating higher levels of optimism. The internal reliability in the present study was .71.

*Self-esteem.* The 10-item Rosenberg Self-esteem Scale (Rosenberg, 1965) was used to provide a measure of global evaluation of self-worth. This self-esteem scale is the most widely used instrument for the measure of this construct (Blascovich & Tomaka, 1991). Participants are asked to respond by rating how strongly they agree with each statement (e.g., “On the whole, I am satisfied with myself”) on a 4-point scale, using anchors of “strongly agree” to “strongly disagree”. This gave a possible range of 10-40, with higher scores indicating higher self-esteem. The internal reliability coefficient for this sample was .85.

### *Procedure*

Survey forms containing the six scales and asking questions about age and gender were administered to all students in Grades 8-12 in the secondary school that participated in the study. The classroom teachers who had been provided with instructions regarding the administration protocol administered the survey forms.

## **Results**

Table 1 presents summary data and bivariate correlations for females and males for each of the career variables. There were no significant differences between males and females on any of the independent variables (Career Goals, Career Expectations, Optimism, Self-esteem), or on the dependent variable of Career Planning. Females ( $M = 38.92$ ,  $SD = 6.79$ ) demonstrated significantly higher levels of Career Exploration than males ( $M = 37.28$ ,  $SD = 8.31$ ),  $t(433.38) = 2.32$ ,  $p < .05$ ). For females, Career Planning was meaningfully associated ( $\geq .32$ , Tabachnik & Fidell, 1996) with Career Exploration and Career Goals, Career Goals was associated with Optimism, and Optimism was associated with Self-esteem. For males, Career Planning was associated with Career Exploration and Career Goals, Career Exploration was associated with Career Goals, and Career Goals was associated with Career

Expectations. This different pattern of results for females and males supports examining females and males separately.

Table 1  
Summary Data and Bivariate Correlations for Female and Male samples

	<i>N</i> <sup>#</sup>	<i>M</i>	<i>SD</i>	2	3	4	5	6
1. Career Planning								
Females	240	60.81	12.67	.52***	-.48***	-.26***	-.31***	.25***
Males	224	61.43	13.47	.64***	-.46***	-.25***	-.20**	.17**
2. Career Exploration								
Females	242	38.92	6.97	-	-.20**	-.23***	-.14*	.17*
Males	225	37.28	8.31	-	-.37***	-.21***	-.15*	.01
3. Career Goals								
Females	238	12.71	5.25		-	.19**	.33***	-.26***
Males	225	13.00	5.81		-	.42***	.16	-.13
4. Career Expectations								
Females	240	9.11	3.28			-	.13	-.23***
Males	224	9.59	3.94			-	.21**	-.29***
5. Optimism								
Females	242	6.00	1.79				-	-.47***
Males	225	5.96	1.81				-	-.21**
6. Self-esteem								
Females	238	29.98	5.62					-
Males	222	30.08	5.88					-

Note: <sup>#</sup> = sample sizes vary as not all students completed all measures; \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ .

Path analyses were utilized to test the hypothesized models. Path analysis does not set out to prove causality among a set of variables but it is able to investigate how tenable a particular model is. These analyses involved performing separate multiple regression equations for each endogenous variable in the models and calculating direct and indirect effects for the predictor variables. Endogenous variables are those variables that are preceded by predictor variables. The indirect effects are established by multiplying the beta weights taken from the direct paths that connect a predictor variable to its designated dependent variable. When more than one indirect path exists between a predictor and its dependent variable, the products of the beta weights are summed to produce the total effect of one variable on another. The standardized regression coefficients of the predictor variables and their endogenous (dependent) variables are reported as path coefficients (beta weights). The models that are reported in Figures 1 and 2 are abbreviated versions of the full models that were tested; the Figures have been reduced by including the significant, but not the non-significant, pathways. The full models are reported in Table 2.

Table 2  
*Direct, Indirect and Total Effects predicting Career Planning and Career Exploration for Females and Males*

Outcome Variables	Predictor Variables	Females				Males			
		Direct Effects	Indirect Effects	Total Effects	$R^2$	Direct Effects	Indirect Effects	Total Effects	$R^2$
Career Planning	Career Goals	-.40***	-	-.40	.29***	-.45***	-	-.45	.26***
	Career Expectations	-.16**	-.05	-.20		-.03	-.18	-.21	
	Optimism	-.13	.00	-.12		-.10	-.03	-.13	
	Self-esteem	.07	.01	.08		.08	.05	.13	
Career Exploration	Career Goals	-.15*	-	-.15	.10***	-.32***	-	-.32	.14***
	Career Expectations	-.18***	-.02	-.19		-.08	-.13	-.21	
	Optimism	-.05	.00	-.05		-.08	-.02	-.10	
	Self-esteem	.07	.00	.07		-.07	.03	-.04	
Career Goals	Career Expectations	.11	-	.11	.15***	.40***	-	.40	.18***
	Optimism	.27***	.00	.28		.09	.06	.05	
	Self-esteem	-.12	-.03	-.14		.01	-.10	-.10	
Career Expectations	Optimism	.04	-	.04	.06***	.15*	-	.15	.11***
	Self-esteem	-.22**	-	-.22		-.26***	-	-.26	

Note: \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ .

For Career Planning, the variables of Career Goals, Career Expectation, Optimism and Self-esteem accounted for 29.3% of the variance for females and 26.0% for males (see Table 2). For females, Optimism had an indirect effect via Career Goals, Self-esteem had an indirect effect via Career Expectation, while Career Expectation and Career Goals had direct effects. For males, Optimism and Self-esteem had indirect effects via Career Expectation and Career Goals, Career Expectation had an indirect effect via Career Goals, while Career Goals had a direct effect. For Career Exploration, the variables of Career Goals, Career Expectations, Optimism, and Self-esteem significantly accounted for 9.6% of the variance for females, and 14.1% for males. For females, Optimism had an indirect effect via Career Goals, Self-esteem had an indirect effect via Career Expectations, while Career Expectations and Career Goals had direct effects. For males, Optimism and Self-esteem had indirect effects via Expectations and Career Goals, Expectations had an indirect effect via Career Goals, while Career Goals had a direct effect. These results indicate different direct and indirect pathways predicting Career Planning and Career Exploration for males and females.

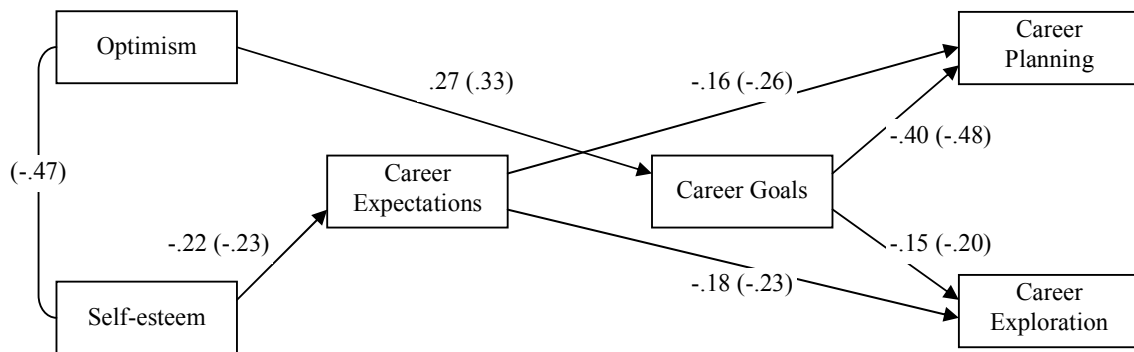
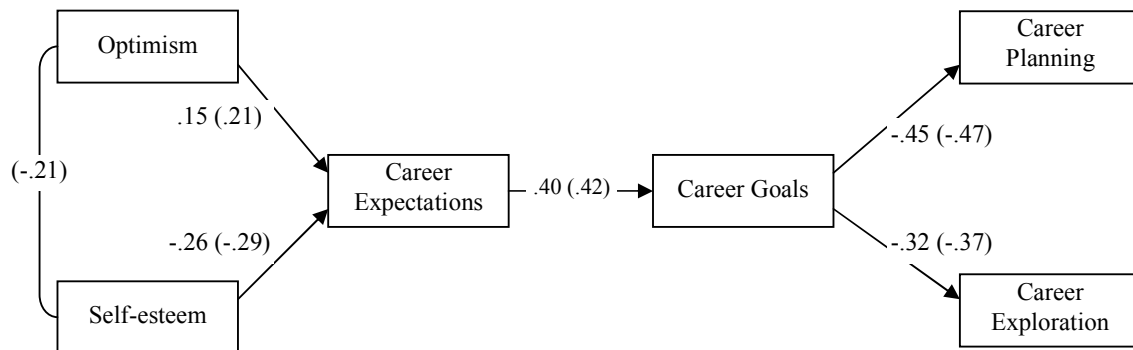


Figure 1. Significant pathways for female sample; standardized regression coefficients are presented without brackets, bivariate correlations are presented within brackets.



*Figure 2.* Significant pathways for male sample; standardized regression coefficients are presented without brackets, bivariate correlations are presented within brackets.

### Discussion

Differences between young males and females concerning the hypothesized model were found. As expected, the person inputs of Optimism and Self-esteem influenced Career Expectations, sequentially predicting Career Goals, Career Planning and Career Exploration for males. For females the results depicted different pathways to Career Planning and Career Exploration. Optimism had a direct influence on Career Goals, which subsequently predicted Career Planning and Career Exploration. Self-esteem on the other hand, predicted Career Expectations, which then directly influenced Career Planning and Career Exploration, bypassing Career Goals. For males, the findings suggest that individuals with a positive outlook on life, who have a sense of worth, and who view the outcomes that occur in situations as being due to their own efforts and striving are more likely to set career goals and thus, are more likely to have career plans and explore their career options. For females, the model suggests that those with a positive outlook are more likely to set career goals and subsequently are more likely to plan for a career and explore their career options. Optimism is not depicted as influencing Career Expectations for females. Unexpectedly, females with high self-esteem were less likely to view the outcomes that occur in situations as being due to their own striving and efforts, but were still subsequently more likely to plan for their career or explore their career options.

Self-esteem has been identified within the stress literature as beneficial in aiding the individual to adapt to stressful life situations. Self-esteem in the current model appears to influence the expectations of both males and females, but in different ways. Within the career development literature there is inconsistency concerning the role and importance of self-

esteem. The current findings suggest that for males, self-esteem performs a positive and contributory role to the development of career maturity, whereas for females the role of self-esteem appears negative, and requires further exploration. Research within the career development domain has focused primarily on the relationship of self-efficacy to career related variables. However, based on the current results, future research should test for the effects of self-efficacy conjointly with self-esteem and identify the contributory role of both in the career development process within the SCCT or CMR framework.

Optimism is suggested to perform a key role in motivating the development of career goals and expectations and in encouraging the student to remain engaged in these activities, despite adversities that may arise. Having a positive outlook on life appears to perform a conducive and regulatory role for males and females in the career development process. For males, a tendency to expect that good things will happen contributes to the expectation that one's goals and achievements are in one's control and relates to one's own efforts and striving. For females, the expectation that good things will happen, directly and positively affects the setting of career goals. Thus, for males, it appears that the aspect of control and the belief that outcomes are within one's control performs a mediating role between optimism and career goals, but this is not so for females.

The agentic variable of goals appears to perform a similar role for both males and females, in that setting goals aids the individual in exercising personal control and agency by motivating and directing the individual's vocational planning and exploration. For males, the relationship between career goals, career planning and exploration was stronger than that for females, especially the relationship between career goals and career exploration. Having set career goals appears to contribute to males exploring and obtaining information about their career interests through sources such as family members, teachers and books. This relationship was not as strong for females. This finding suggests that the setting of goals directs and motivates behaviour for males and females differentially. Future research could examine whether the nature of the goals, for example their level of specificity, contributes to this disparate finding.

Interestingly, a greater proportion of variance was accounted for by the person inputs of optimism and self-esteem, expectations, and career goals in the prediction of career planning (26% for males, 29% for females) than for career exploration (14% and 10% respectively). Thus, the variables in the current model account better for an understanding of career planning than they do for career exploration. The identification of other variables



contributing to the career exploration and maturity process requires further examination. Based on the CMR theory proposed by Lazarus, examining career development as an adaptational process would require an examination of the individual's affect, the meaning associated with work and a career, and the individual's appraisal of the career development process. These aspects may be relevant to one's initiative to explore career options. Additionally, the CMR framework provides a way to examine how individuals manage the career exploration and development process.

### *Conclusions*

A limitation of this study concerns the cross-sectional design used. Thus, statements about causality or the temporal positioning of the variables in the model cannot be conclusive, and future longitudinal research needs to be conducted to test this. Also, the current study was not able to investigate contextual factors, such as the emphasis the school, parents and peers placed on career development, the support provided by teachers and friends or whether career counselling was available to students. Despite these limitations, the current study has contributed to the literature by identifying plausible, but different, pathways for males and females in the career development process by testing the roles of optimism and self-esteem within a career-based model. The identification of differences across the genders and the role of person inputs of optimism and self-esteem contributes to the conceptual understanding of career development, aids in the development of career development programs, and provides a guide for the career development assessment and counselling process. It remains important to keep in mind, however, that each person is individual and the assessment and counselling process must be tailored to meet individual needs. The frameworks of SCCT and CMR provide a holistic approach to conceptualizing career development, and such an approach applied to career development increases the likelihood of achieving successful outcomes for the adolescent and attaining a greater understanding of the career development process.

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