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Internal and external barriers, cognitive style, and the career development variables of focus and indecision

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Abstract

One hundred and thirty final year high school students were administered scales tapping optimism/pessimism, self-esteem, external career barriers, career decision-making self-efficacy, career focus and career indecision. It was hypothesised, first, that cognitive style (optimism/pessimism) would predict both internal (self-esteem) and external career-related barriers, second, that internal barriers would interact with external barriers and impact on career decision-making self-efficacy, and third, the previously mentioned variables would subsequently predict career focus and career indecision. Results demonstrated that cognitive style was influential in determining the perception of internal barriers (for females and males) and external barriers (females only). Internal and external barriers, along with optimistic/pessimistic cognitive style, were found to predict career decision-making self-efficacy (in males, but not in females). There was no evidence that internal and external barriers interacted to predict career decision-making self-efficacy. Last, it was found that career decision-making self-efficacy, internal and external barriers, and optimistic/pessimistic cognitive style were able to predict career focus (males and females) and career indecision (males only). Results are discussed in the context of Carver and Scheier's (1981) control theory.

Career barriers have been described as any factors that thwart the achievement of career goals (Crites, 1969). They have typically been viewed as either internal to the person, such as lack of confidence or low motivation, external to the person, such as lack of access to education and poverty, or both. Crites (1969) saw barriers as either internal conflicts or external frustrations that might impede career development. O'Leary (1974) hypothesised six types of internal barriers and four types of external barriers specific to women's career development. Farmer (1976) suggested six internal (self-concept) and three external (or environmental) barriers, while Harmon (1977) proposed examining barriers from both a psychological and a sociological perspective. More recently, Swanson and Tokar (1991a) argued that attitudinal (internal), social/interpersonal (external), and interactional barriers (between internal and external) should be considered.

Studies have consistently found that students perceive a range of career barriers, such as ethnic and gender discrimination, financial problems, family attitudes, perceived lack of ability and lack of educational opportunities (Luzzo, 1993, 1995; McWhirter, 1997; Swanson, Daniels, & Tokar, 1996; Swanson & Tokar, 1991a, 1991b). Gender (McWhirter, 1997; Swanson & Tokar, 1991a, 1991b), cross-ethnic (Luzzo, 1993) and cross-cultural (Patton, Creed, & Watson, 2002) differences in perceptions of career barriers have also been identified.

However, while career barriers have been examined empirically, and have been acknowledged in career development theories (e.g., Crites, 1969), they have been discussed primarily in the context of women's career development and have not constituted an integral component of mainstream career theories (Luzzo, 1996). It has been argued that Gottfredson's (1981) developmental theory of occupational aspirations provides one of the more fruitful frameworks from which to examine career-related barriers (Luzzo). There are two salient points from this theory concerning career barriers. First, Gottfredson suggested that when individuals identify and confront their career-related barriers this would lead them to compromise their vocational goals. Luzzo has also suggested that as barriers are recognised, confidence may be affected, and other career-related variables might also be compromised. Second, Gottfredson's theory suggests that it is the interaction between the internal barriers (self-concept) and external barriers (perceived accessibility) that directly influences career-related variables. In relation to this point, Luzzo (1995, 1996) and others (Swanson & Tokar, 1991a, 1991b) have suggested that the perception of career-related barriers need not necessarily be viewed as negative for the individual, and that some individuals may view barriers as challenging rather than defeating.

One internal person-related variable that is likely to influence whether the individual perceives a barrier as being challenging or defeating is their cognitive style. A useful cognitive style to examine in this context is optimism/pessimism, which is a generalised tendency to expect positive outcomes (Scheier & Carver, 1993). A small number of studies has investigated optimism in the career area (Creed, Patton, & Bartrum, 2002; Patton, Bartrum, & Creed, 2002; Petrone, 2000; Powell & Luzzo, 1998). Creed, Patton and Bartrum (2002), for example, found that students who endorsed higher levels of optimism showed greater career planning and exploration, were more decided about their career and had more career goals, while those high in pessimism reported less career knowledge, were more indecisive and achieved more poorly academically. The findings from these studies suggest that optimism and pessimism might play a functional role in the development of career-related variables.

Lazarus (1991) has referred to optimism/pessimism as an appraisal style as it can influence the way an individual perceives, feels and copes with a situation. For example, an optimistic individual is more likely to view external barriers, such as financial demands, as challenging rather than threatening to their achievement of vocational goals. This highlights the importance of personal dispositions as a cognitive style that can influence career motivation (e.g., career expectations and goals) and future career-related behaviours. Numerous studies have identified significant associations between career development and cognitive styles in general, such as attributional style and locus of control (e.g., Luzzo & Jenkins-Smith, 1998; Powell & Luzzo, 1998), which suggest that cognitive style is a salient factor affecting the career development process.

Based on this literature review, the current study aims to investigate the constructs of cognitive style (optimism/pessimism), internal barriers (operationalised in this study as self-esteem), external barriers, career decision-making self-efficacy, career focus and career indecision. Specifically, it is predicted that optimism/pessimism will influence the perception of internal and external barriers, and that internal and external barriers will interact and impact on career-related confidence and subsequently affect career focus and career indecision.

Method

Participants

Participants were 130 Grade 12 students whose ages ranged from 17.16-19.03 years (M = 18.08, SD = .42), with 79 females, 49 males and two students who did not indicate gender. They were drawn from one middle-level socioeconomic suburban school situated in a medium sized city in the south-eastern part of Australia. Three levels of socioeconomic status (SES) were calculated based on parental education (Anderson & Vervoorn, 1983, p.172). There were 56% of students with parents having up to 10 years of education, 30% with parents completing 12 years, and 15% with parents with tertiary education.

Instruments

Perceived Barriers. Students completed a modified 8-item version of the Perceived Barriers Scale (PBS; Howell, Frese, & Sollie, 1977). This scale asks respondents to indicate, "How much effect do you think each of the following things will have in keeping you from getting the job you desire?" to a range of barriers, including parental interest, current school, finances, mobility, job and training availability and availability of career advice. The scale was modified to make it suitable for use with Australian students (e.g., "technical school and college" was replaced with "college and university"). Students were asked to respond on a 4-item scale with end-points "no effect" and "very much effect". Higher scores indicated more perceived barriers. The internal reliability coefficient for the eight items was .84.

Career Focus. One subscale from the Career Development Inventory (Australian version, CDI-A; Lokan, 1984) was used to measure career focus. The full CDI-A has 72 items and measures four career development areas of planning, exploration, knowledge of the world of work and knowledge of decision-making principles. Two composite subscales can be calculated. These are Career Development Attitude (CDA; containing the 36 items that tap planning and exploration) and Career Development Knowledge (CDK; containing the 36 items that tap career knowledge). Only the CDA composite subscale is reported in this study (sample item, "How much time and thought have you given to choosing a regular adult occupation?"). Higher scores indicate more career focus. Sound psychometric properties are reported in the CDI-A manual (Lokan), and are consistent with those reported for the original US inventory (Pinkney & Bozik, 1994). The internal reliability coefficient for the CDA in the current study was .90.

Career Indecision. The 18-item Career Decision Scale (CDS; Osipow, 1987) consists of two subscales, the 16-item CDS-Indecision scale (CDS-Ind) that provides a measure of career indecision, and the 2-item CDS-Certainty scale that measures the degree of certainty in having made a career decision. The CDS-Ind is reported in this study (sample item, "I can't make a career choice right now because I don't know what my abilities are"). Students responded on a 4-point scale, with end-points of "exactly like me" and "not at all like me", with lower scores indicating more indecision. Satisfactory validity and reliability data have been reported for the CDS (Hartman, Fuqua, & Hartman, 1983). The internal reliability for the CDS-Ind was .90.

Career Decision-making Self-efficacy. The 25-item short version of the Career Decision-making Self-efficacy scale (CDMSE; Betz, Klein, & Taylor, 1996a) was used to measure confidence regarding ability to make career-oriented decisions (sample item, "How confident are you that you could determine what your ideal job would be?"). Participants responded on a 5-point scale, with end-points of "no confidence at all" and "complete confidence". Higher scores indicated more career-related confidence. Betz et al. (1996b) have reported adequate psychometric properties. The internal reliability for this sample was .95.

Self-Esteem. The 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) was used to measure global self-worth. The RSE is the most widely used instrument for the measure of this construct (Blascovich & Tomaka, 1991). Participants responded on a 4-point scale, using anchors of "strongly agree" to "strongly disagree" (sample item, "I feel that I have a number of good qualities"), with higher scores indicating higher self-esteem. The internal reliability was .87.

Optimism/pessimism. The Life Orientation Test – Revised (LOT-R; Scheier, Carver, & Bridges, 1994) was used to measure this cognitive style. The LOT-R is a 10-item scale, with four

filler items and six scale items. Creed, Patton, and Bartrum (2002) have shown that with high school students, two subscales of Optimism (LOT-Opt) and Pessimism (LOT-Pes) should be utilised. Students responded on a 4-point scale, with end-points of "strongly agree" and "strongly disagree" (sample item, "In uncertain times I usually expect the best"), with higher scores indicating more optimism and more pessimism respectively. Creed et al. reported internal reliabilities of .62 (Optimism) and .78 (Pessimism), which were .50 and .80 in the current study.

Procedure

The data reported here constitute one aspect of a larger study examining the correlates of career maturity for high school students (Patton & Creed, 2001). Classroom teachers, who had been provided with instructions regarding the administration protocol, distributed survey forms to all students in Grade 12 who attended on the day.

Results

Initial analyses indicated that males and females differed significantly on Career Focus (CDA) and Career Indecision (CDS-Ind), but not on any of the independent or demographic variables (see Table 1). From the correlation matrix, external barriers (PBS) for males was correlated with Career Focus, such that those who reported more barriers engaged in more career planning and exploration. For females, external barriers was correlated with Career Focus, Career Indecision (CDS-Ind), Self-esteem (RSE) and Pessimism (LOT-Pes), such that those with more barriers engaged in more career planning and exploration, were less indecisive, had lower self-esteem and more pessimism.

Antecedents and Consequences of Perceived Barriers

The first part of the model being tested is based on the proposition that cognitive style (optimism/pessimism) will influence the perception of internal (self-esteem) and external career-related barriers. The second part of the model is based on the proposition that perceived internal and external barriers will impact on career-related confidence and subsequently affect career development variables. Path analysis, which does not set out to prove causality among a set of variables but is able to investigate how tenable a particular model is, was used to test two hypothesised models (see Figures 1 & 2). It is the analysis of choice in this particular study as the sample sizes did not allow for more complex analyses, such as structural equation modeling. The path analyses involved performing separate multiple regression analyses for each endogenous variable and calculating direct and indirect effects for the predictor variables. The standardised regression coefficients of the predictor variables and their endogenous (dependent) variables are displayed as path coefficients (beta weights). Analyses were conducted separately for males, females and total samples (see Table 2).

Gottfredson's (1981) theory proposed that one's internal barriers would interact with external barriers to influence career development variables. Prior to the path analysis, CDMSE, RSE, PBS and an RSE x PBS interaction term was regressed on CDA and CDS-Ind, for males and females separately and for the total sample. RSE, PBS and an RSE x PBS interaction term was then regressed on CDMSE. As no interaction terms in any of these multiple regression analyses made a significant individual contribution to predicting CDMSE, CDI or CDS-Ind, no interaction term was included in the path analyses.

Predicting Internal and External Barriers

It was hypothesised that optimism/pessimism would predict internal (self-esteem; RSE) and external (PBS) barriers, which in turn would influence the level of career related decision-making self-efficacy. For the total sample of males and females combined, optimism and pessimism accounted for a significant 28% of the variance in self-esteem. Both optimism and pessimism emerged as significant individual predictors, with total effects on self-esteem of .36

and -.31 respectively. When females and males were examined separately, significant amounts of variance were predicted for each (females = 20%; males = 42%), however, pessimism emerged as the only significant individual predictor for females (beta = -.36), whereas optimism was the only one for males (.53). For external barriers, optimism and pessimism were unable to predict

Table 1
Summary data and bivariate correlations (N = 130). Correlations for males appear above the diagonal; females are below.

	Total			Males			Females											
Variables	n[1]	M	SD	n	M	SD	n	M	SD	t[2]	1	2	3	4	5	6	7	8	9
1. PBS	130	19.44	5.22	49	19.48	4.83	79	19.43	5.49	-0.03	-	.29*	.19	.03	.19	.02	-.16	-.02	-.20
2. CDA	129	106.80	17.49	49	102.67	19.12	78	109.45	16.20	2.14*	.32**	-	.37*	.43**	.52***	.17	-.05	.10	.09
3. CDS-Ind	125	48.40	9.33	47	45.22	8.91	78	50.32	9.11	3.06**	-.29*	.16	-	.35*	.64**	.17	-.33*	-.11	-.08
4. RSE	122	28.36	4.92	45	29.22	6.08	77	27.86	4.06	-1.49	-.26*	.06	.16	-	.68***	.62***	-.42**	-.21	-.06
5. CDMSE	116	84.15	14.97	41	84.16	16.18	75	84.15	14.38	-0.00	-.02	.26*	.17	.17	-	.44**	-.42**	-.30	-.06
6. LOT-Opt	118	8.32	1.32	43	8.48	1.47	75	8.23	1.26	-0.99	.14	.21	-.15	.27*	.12	-	-.41**	-.20	-.25
7. LOT-Pes	118	7.67	1.85	43	7.56	2.04	75	7.73	1.75	0.49	.24*	-.03	-.17	-.40***	-.09	-.16	-	.12	.08
8. Age	130	18.08	0.42	49	18.14	0.41	79	18.04	0.43	-1.23	.03	-.03	.08	-.07	.12	.00	-.05	-	.33*
9. SES											-.10	-.05	.10	-.08	.06	.00	-.13	.07	-

Note 1: PBS = Perceived Barriers Scale; CDA = Career Development Attitude subscale of the Career Development Inventory – Australia; CDS-Ind = Indecision subscale of CDS; RSE = Rosenberg Self-esteem Scale; CDMSE = Career Decision-making Self-efficacy Scale; LOT-Opt = Optimism subscale of Life Orientations Test; LOT-Pes = Pessimism subscale of the LOT-R; SES = Socio-economic level.
Note 2: n^1 = not all participants completed all scales satisfactorily
Note 3: t^2 = indicates difference between males and females
Note 4: * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 2

Direct and indirect effects for predicting Career Focus (CDA) and Career Indecision (CDS-Ind) using Optimism (LOT-Opt), Pessimism (LOT-Pes), Self-esteem (RSE), External Barriers (PBS), and Self-efficacy (CDMSE).

		Causal Effects											
		Females				Males				Total			
Outcome variables	Predictor variables	Direct	Indirect	Total	R^2	Direct	Indirect	Total	R^2	Direct	Indirect	Total	R^2
Career Focus	CDMSE	.24*	-	.24	.20**	.42*	-	.42	.39**	.30**	-	.30	.23***
(CDA)	RSE	.07	.03	.10		.31	.26	.57		.16	.11	.27	
	PBS	.34**	.00	.34		.24	.06	.30		.30**	.03	.33	
	LOT-Opt	.11	.10	.21		-.11	.29	.18		.02	.16	.18	
	LOT-Pes	-.04	.06	.02		.25	-.22	.03		.08	-.06	.02	
Career Indecision	CDMSE	.16	-	.16	.14	.71***	-	.71	.44**	.31**	-	.31	.17**
(CDS-Ind)	RSE	.09	.02	.11		-.11	.43	.32		.09	.11	.20	
	PBS	-.21	.00	-.21		.05	.11	.16		-.08	.03	-.05	
	LOT-Opt	-.18	.00	-.18		-.13	-.20	-.33		-.20*	.03	-.17	
	LOT-Pes	-.09	.45	.36		-.12	-.19	-.31		-.15	-.07	-.22	
CDMSE	RSE	.14	-	.14	.03	.61***	-	.61	.50***	.36**	-	.36	.18***
	PBS	.02	-	.02		.15	-	.15		.10	-	.10	
	LOT-Opt	.08	.03	.11		.01	.31	.32		.06	.14	.20	
	LOT-Pes	-.02	-.04	-.06		-.13	-.16	-.29		-.07	-.10	-.17	
RSE	LOT-Opt	.20	-	.20	.20***	.53***	-	.53	.42***	.36***	-	.36	.28***
	LOT-Pes	-.36**	-	-.36		-.21	-	-.21		-.31***	-	-.31	
PBS	LOT-Opt	.18	-	.18	.09*	-.05	-	-.05	.03	.14	-	.14	.03
	LOT-Pes	.28*	-	.28		-.18	-	-.18		.14	-	.14	

Note: See Table 1 for legend; * = $p < .05$; ** = $p < .01$; *** = $p < .001$

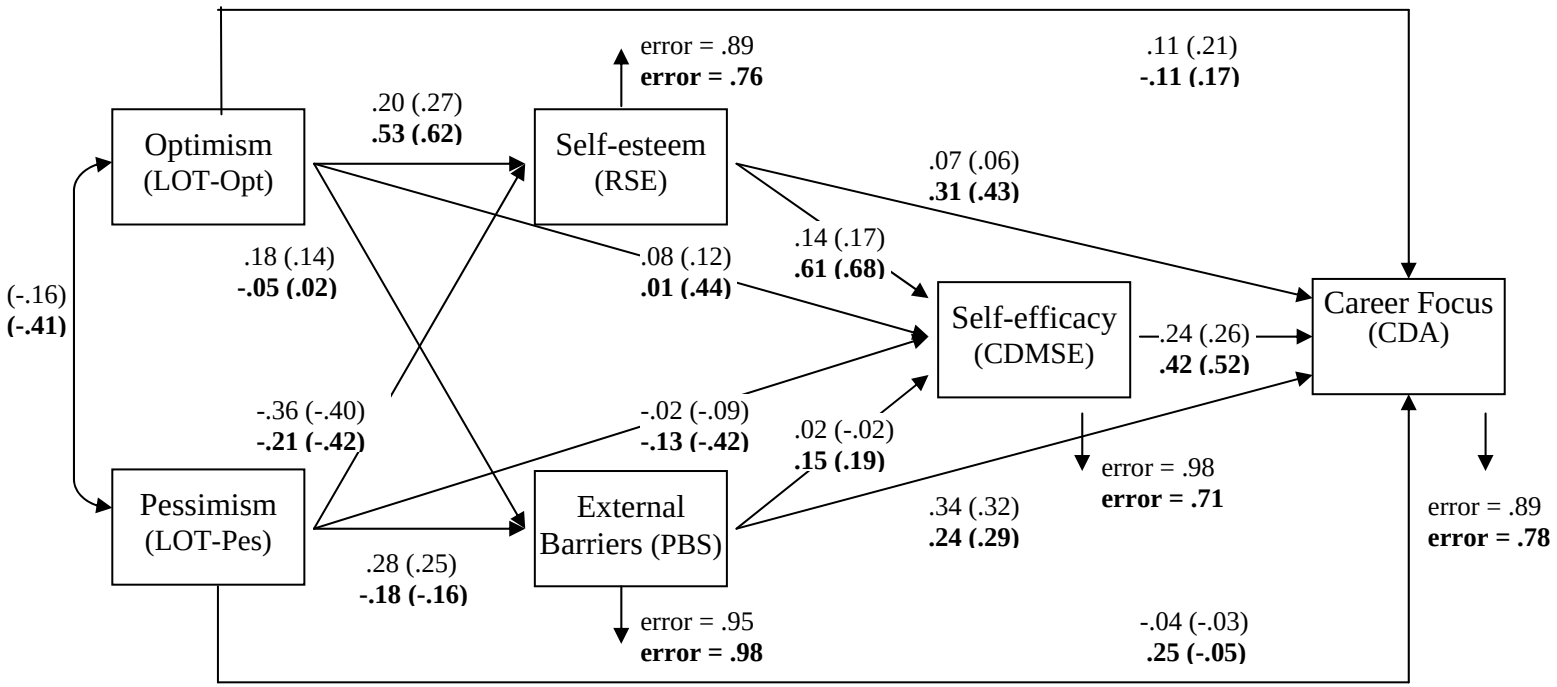

Figure 1: Direct and indirect effects of Optimism (LOT-Opt), Pessimism (LOT-Pes), Self-esteem (RSE), External Barriers (PBS), and Self-efficacy (CDMSE) on Career Focus (CDA). Standardised regression coefficients are presented without brackets, bivariate correlations are presented within brackets. Results for females are presented in normal type; results for males are presented in bold type.

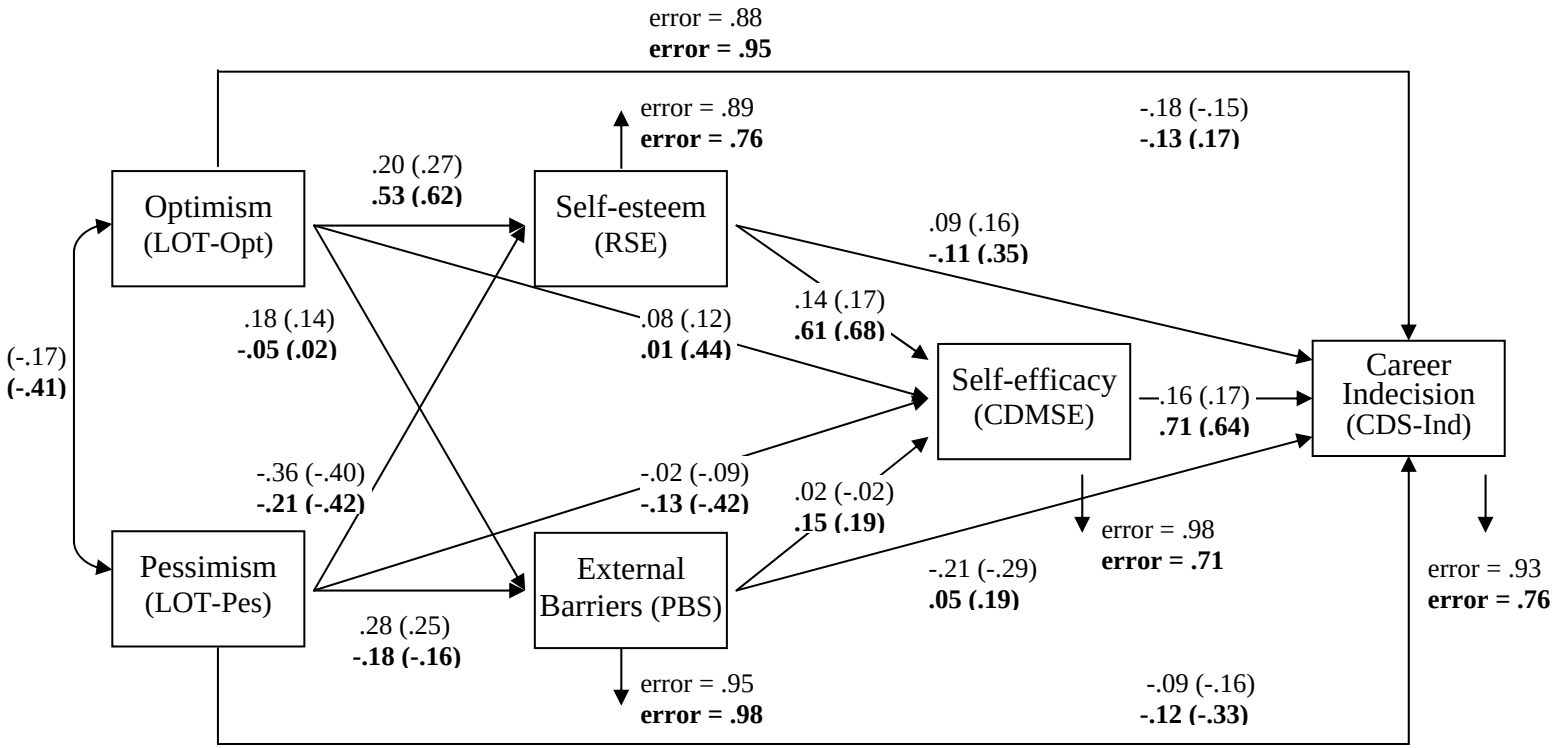

Figure 2: Direct and indirect effects of Optimism (LOT-Opt), Pessimism (LOT-Pes), Self-esteem (RSE), External Barriers (PBS) and Self-efficacy (CDMSE) on Career Indecision (CDS: Ind). Standardised regression coefficients are presented without brackets, bivariate correlations are presented within brackets. Results for females are presented in normal type; results for males are presented in bold type.

significant amounts of variance in the total sample and in the male sample. When females were examined, optimism and pessimism predicted a significant 9% of the variance in barriers, and pessimism emerged as a significant individual predictor (.28). These models suggest that, for females, pessimism predicts both self-esteem and external barriers, but for males, optimism predicts self-esteem, but neither optimism nor pessimism predicts external barriers.

Predicting CDMSE

For the total sample, optimism, pessimism, self-esteem and external barriers accounted for a significant 18% of the variance in career decision-making self-efficacy (CDMSE). Self-esteem emerged as the only significant individual predictor, and also had the strongest total effect (direct + indirect; beta = .36) on CDMSE, followed by optimism (.20). A somewhat different picture emerged when females and males were examined separately. For females, the independent variables accounted for a non-significant 3% of the variance in CDMSE, and no variable emerged as a significant individual predictor. For males, optimism, pessimism, self-esteem and perceived barriers accounted for a significant 61% of the variance in CDMSE. Self-esteem was a significant individual predictor, and also had the strongest total effect (.61), followed by optimism (.32) and pessimism (-.29). These models depict that, for males, CDMSE was primarily determined directly by self-esteem, and indirectly by levels of optimism, whereas for females, levels of self-esteem, perceived barriers, optimism and pessimism had no significant effect.

Predicting Career Focus and Career Indecision

For Career Focus, career decision-making self-efficacy (CDMSE), self-esteem, external barriers, optimism and pessimism were able to predict a significant 23% of the variance in the total sample. CDMSE (.30) and external barriers (.30) were significant individual predictors. External barriers (.33), followed by CDMSE (.30) displayed the strongest total effects. When females were examined separately, the independent variables were able to predict a significant 20% of the variance, with external barriers (.34) and CDMSE (.24) emerging as significant individual predictors, and also displaying the strongest total effects. For males, a significant 39% of the variance was accounted for. CDMSE emerged as the only significant individual predictor, and self-esteem (.57), CDMSE (.42) and external barriers (.30) displayed the strongest total effects. These findings demonstrate different predictors and predictor pathways for males and females. The models suggest that external barriers and CDMSE are the strongest predictors for females, whereas self-esteem, CDMSE and external barriers are important for males.

For Career Indecision, CDMSE, self-esteem, perceived barriers, optimism and pessimism were able to predict a significant 17% of the variance in the total sample. CDMSE (.31) and optimism (-.20) were significant individual predictors. The strongest total effects were displayed by CDMSE (.31), followed by pessimism (-.22). When females were examined separately, the independent variables did not significantly predict Career Indecision. For males, a significant 44% of the variance was accounted for. CDMSE (.71) emerged as a strong significant individual predictor, with CDMSE (.71), optimism (-.33), self-esteem (.32) and pessimism (-.31) displaying the strongest total effects. These findings also demonstrate different predictors and predictor pathways for males and females. The models suggest that CDMSE, and to a lessor extent optimism, self-esteem and pessimism, are predictors of Career Indecision for males, whereas no variables in the model were important for females.

Discussion

For the total sample, optimism and pessimism were able to predict internal barriers, with more optimism and less pessimism related to higher levels of self-esteem. In females, less

pessimism was more strongly associated with more self-esteem, whereas for males, more optimism was associated with more self-esteem. A different picture emerged for external barriers. Optimism and pessimism did not predict external barriers for the total sample or males separately. Optimism and pessimism did predict external barriers for females, although only pessimism emerged as a significant individual predictor, with the more pessimism the more barriers perceived. These results suggest that pessimism is important in predicting both self-esteem and external barriers in females, and that optimism predicts self-esteem, but neither optimism nor pessimism predicts external barriers, in males. The findings suggest that it would be helpful to encourage a more optimistic cognitive style in young women, about themselves and about their perceived external barriers.

In relation to career decision-making self-efficacy, optimism, pessimism, self-esteem and external barriers were significant predictors for the total sample. Self-esteem emerged as the sole significant individual predictor, with having more self-esteem associated with more decision-making self-efficacy. The same picture emerged for males, with self-esteem strongly and directly influencing career decision-making self-efficacy and optimism influencing it indirectly. This was not the case for females. Males were likely to have more career decision-making self-efficacy when their self-esteem and optimism were high, whereas for females, variables other than those examined in the present study influence their decision-making efficacy.

Career focus and career indecision variables (both of which were largely uncorrelated) were examined in the present study. In relation to career focus, career decision-making self-efficacy, self-esteem, external barriers, optimism and pessimism did emerge as significant predictors. For females, career decision-making self-efficacy and external barriers were important, whereas for males, career decision-making self-efficacy, external barriers and self-esteem were the important predictors. For career indecision, career decision-making self-efficacy, optimism, self-esteem and pessimism emerged as predictors for males, whereas the variables in this study were not able to predict career indecision in females. For males, less indecision was associated with more career decision-making self-efficacy, self-esteem and optimism, and less pessimism.

It can be said from this study that the cognitive style of optimism/pessimism is influential in determining the perception of internal barriers (females and males) and external barriers (females only). Internal and external barriers, along with optimistic/pessimistic cognitive style, were found to influence career decision-making self-efficacy (in males, but not in females), although there was no evidence that internal and external barriers interacted to influence career decision-making self-efficacy. Lastly, and in turn, career decision-making self-efficacy, internal and external barriers, and optimistic/pessimistic cognitive style were able to predict career focus (males and females) and career indecision (males only).

Carver and Scheier (1981) proposed that optimism/pessimism performs a self-regulatory function within control theory, and postulated 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. In regard to career barriers, being more optimistic and less pessimistic were related to higher self-esteem (for males and females), and being more pessimistic was associated with more external barriers (for females), as would be expected by control theory. In a similar manner, and consistent with control theory, being more optimistic was associated with more career decision-making self-efficacy (for males). Optimism and pessimism were also able to contribute to the prediction of career focus and career indecision, although these influences were largely indirect. For these variables, it can be said that having more optimism was associated with a greater career focus (in males and females), and having more pessimism for girls and less pessimism for boys was associated with more career indecision. Control theory would predict that optimistic students would perceive fewer career barriers, be more confidence in their career decision-making, have more

career focus (i.e., more career planning and exploration) and be less career indecisive. That is, they would be more likely to foresee more favourable outcomes occurring. Support for this proposition is reflected in the current findings.

In relation to gender, previous research has identified differences in the career development of males and females (Luzzo, 1995; Patton & Creed, 2001; Petrone, 2000). The current study clearly identified different predictors and pathways for males and females. For example, self-esteem, external barriers, optimism and pessimism were able to predict career decision-making self-efficacy for males but not for females. From this study, it can be concluded that, for females, high levels of pessimism are associated with external barriers and career indecision, and high levels of optimism are associated with a stronger career focus. For males, having less pessimism is associated with more external barriers, career decision-making confidence and career indecision, and having more optimism is associated with career decision-making self-efficacy.

In relation to career barriers, optimism and pessimism were able to predict internal (males and females) and external barriers (females only). This implies that cognitive style affects perceptions of career-related barriers. Internal barriers made a significant contribution to the prediction of career decision-making self-efficacy (in males, but not females). External barriers were important in predicting career focus (males and females), while internal barriers were important contributors to career focus (males only) and career indecision (males only). In relation to internal barriers, the effect was the higher the self-esteem the more career decision-making confidence and the greater the career focus. For external barriers, the perception of more barriers was associated with a greater career focus (i.e., more career planning and exploration). The evidence here is that internal and external barriers are important for career development. Gottfredson (1981) suggested that internal and external barriers were likely to interact to reduce levels of career-related confidence. However, no interaction effect was found in this study. There was evidence that the more internal barriers perceived the less career-related confidence occurred (in males but not females). In contrast to this, there was a weak effect for males where the more external barriers perceived the higher the career-related confidence. So, where internal barriers might erode career-related confidence, perception of external barriers might operate to increase confidence. A similar effect occurred for career focus and career indecision. The more external barriers perceived the more career planning and exploration was engaged in (males and females), whereas the higher the self-esteem the more career planning and exploration (for males). This means that self-esteem, or the perception of fewer internal barriers, is important for career development, but that the perception of external barriers may not lower confidence or reduce career-related activities. This is consistent with recent studies (Luzzo, 1995, 1996; Swanson & Tokar, 1991) that have suggested that perceptions of barriers might motivate increased career-related activity. The evidence from the present study is also that cognitive style is influential, first, in the perception of barriers, and second, in how these barriers influence other career variables.

These findings suggest that understanding cognitive style, and how this influences students' perceptions of internal and external constraints, is important in understanding the processes involved in career development. Optimism/pessimism plays a key role in the perception of internal and external barriers, and through these variables influences important career development variables. Understanding the wider range of factors that influence these variables will lead to more helpful interventions for students. Intervention programs to date have tended to concentrate on information in relation to the self and the world of work, and the development of decision-making skills. The present study has highlighted the need for a more learner-centred focus in such programs whereby cognitive style and perception of barriers are addressed.

Several limitations are worthy of mention. There is a need for a better operationalisation and measure for career barriers. For example, Patton et al. (2002) have identified two aspects

of external barriers for high school students: work and non-work related barriers. Cognitive style might impact on these different types of barriers in different ways, and the different types of barriers might have different impacts on career development variables. Other cognitive style variables also need to be investigated. Locus of control has been investigated in this manner (e.g., Patton, Bartrum, & Creed, 2002), but other styles, including broader personality styles, need also to be examined. Included here is the need to examine optimism/pessimism using more reliable scales. This would allow more confident conclusions to be drawn in relation to these variables. While the LOT-R is widely used, its psychometric properties were less than optimal with this sample. The results also need to be replicated on a larger more representative sample. This is particularly the case for the males as the outcomes here were based on a smaller sample than was available for the females.

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