

Antecedents and consequences of career decisional states in adolescence: A longitudinal study

Authors: Peter Creed ¹
Lee-Ann Prideaux ¹
Wendy Patton ²

¹ School of Applied Psychology and Service Industry Research Centre
Griffith University - Gold Coast Campus, Queensland, Australia

² School of Learning and Professional Studies, Queensland University of
Technology, Kelvin Grove Campus, Queensland, Australia

Abstract

This longitudinal study tested students in Grade 8 and again in Grade 10 on career (maturity, barriers, indecision, decision-making self-efficacy), well-being (self-esteem, life satisfaction, coping) and social (school achievement, paid work experience) variables. Students were allocated to decided or undecided conditions at T1, T2 and across T1-T2, based on self-reported global decidedness ratings. As predicted, the undecided students had poorer career, well-being and social outcomes than the decided students at T1 and T2. The undecided group was also less likely to report having paid work-experience at T1, and to be overrepresented by females at T2. Students who were undecided at T1 and T2 (i.e., continuously undecided) fared poorer than students who were decided at T1 and T2 (continuously decided) and students who changed decision status from T1 to T2 (i.e., developmentally undecided). Females were more likely to be continuously undecided, although continuously undecided males were more complacent and more likely to use maladaptive strategies than females. Implications of being temperamentally versus developmentally undecided are discussed.

The present study adds to the literature by seeking to clarify whether adolescents who report persistent career indecision is associated with more negative intra-individual effects, compared to adolescents who report being decided across time or who report a decision status that reflects a developmental indecision. Chronic indecision has been linked with negative intra-individual variables in a variety of studies (e.g., Kelly & Lee, 2002), although these studies have typically examined the characteristics of different types of career decision makers using cross-sectional designs. A relatively severe type of indecision, in comparison to the other groups identified, has invariably emerged from this body of evidence, although the majority of these studies to date have used young adult student samples. The present study seeks to report on important career-related and intra-individual variables associated with groups of school aged decision makers formed on the basis of measures of career indecision taken across time. We present a brief review of the career indecision typology research to provide the context for the design and predictions of the present study.

It does appear that there are different types of career indecision and that those who suffer from chronic indecision may be worse off than others. Larson, Heppner, Ham and Dugan (1988), for instance, found a more negative pattern of career planning deficits and more deleterious problem

solving attitudes and behaviours amongst the indecisive group they labelled “planless avoiders” compared to the other three cluster identified in their study. More recently, Lucas (1993) found their most indecisive group to be “more nervous, less self-confident, and more depressed” (p. 444) than the other three groups identified. Likewise, Kelly and Pulver (2003) identified a career indecision type labelled “neurotic indecisive information seekers”, who were characterised by significantly more anxiety and general negative affect than the other three types generated. Indeed, Gordon (1998), in a review of all studies of career decidedness types extracted from the literature between 1977 and 1996, identified three types of decided students and four types of undecided students. The “chronically indecisive” type that was identified across all 15 studies reviewed was described as excessively anxious, distressed, and pervasively aimless (Gordon). In addition, the evidence gathered with regard to indecision typology points toward chronically indecisive types having the highest levels of negative personality traits such as neuroticism, global instability and state anxiety (Tokar, Fischer, & Subich, 1998). Moreover, other studies have reported on the personality dimensions that tend to be associated with high levels of career indecision such as low extraversion (Newman, Gray & Fuqua, 1999), anxiety (Fuqua, Newman, & Seaworth, 1988), depression (Saunders, Peterson, Sampson, & Reardon, 2000) and fear of commitment (Leong & Chervinko, 1996).

It is our contention that the experience of career indecision should be viewed as a normal part of growth during a time when high school students are compelled to make many career-related decisions. In this sense, it is a developmentally appropriate phenomenon that fluctuates depending on a variety of factors (Osipow, 1999). These may be external to the individual, such as the need for career-related information, which can be addressed through suitable intervention (Gordon, 1998). Conversely, they may be intra-individual factors, such as a low level of career decision-making self-efficacy, which is nonetheless responsive to intervention (e.g., Betz & Luzzo, 1996). In line with the evidence gathered for university students reviewed above, however, some negative variables have also been linked with adolescents reporting significantly higher levels of career indecision. These include a negative affective disposition (Multon, Heppner & Lapan, 1995), fear of success (Staley, 1996) and low feelings of self-esteem (Germeijs & De Boeck, 2002).

This body of work attests to the myriad of variables that have been explored in order to build a clearer picture of types of undecided students and the particular problems they may be encountering. The present study set out to extend this evidence base by adopting a prospective, longitudinal design in order to better understand the career indecision construct and attempt to “tease out the complexities of the decision processes that are unfolding” (Hall, 1992, p. 247). More specifically, four decision status groups were compared to test for differences on career (maturity, decision-making self-efficacy, barriers) and intra-individual variables (life satisfaction, self-esteem).

It was predicted that high school students who remained undecided across two testing times would fare poorest on the career and intra-individual variables than the other groups since previous studies have consistently demonstrated the worst outcomes for these chronically indecisive types (e.g., Gordon, 1998; Lucas, 1993). In contrast, it was predicted that those who reported being decided at both times would score highest on the variables assessed. This prediction was based upon literature showing the most positive outcomes for those experiencing low levels of career indecision (e.g., Multon et al., 1995; Newman et al., 1999; Vondracek, Hostetler, Schulenberg, & Shimizu, 1990; Vondracek, Schulenberg, Skorikov, Gillespie, & Wahlheim, 1995). Finally, it was predicted that adolescents who reported being undecided and then decided, or decided and then undecided, would fare better than the chronically undecided, but fare poorer than the continuously decided, since these groups would be experiencing developmental indecision. This final hypothesis was founded upon conjecture in the literature that being undecided may not necessarily be an undesirable state of being, but rather, one that is to be expected and worked through in the process in normal career development (e.g., Chartrand et al., 1994; Kelly & Pulver, 2003; Krieschok, 1998).

Method

Participants

At T1, participants were 292 Grade 8 students, comprised of 141 (48%) females, 148 (51%) males, and three (1%) who did not indicate gender. Their ages ranged from 12.51 to 14.76 years ($M = 13.45$, $SD = .41$). On a seven-point self-report measure of school achievement (of VLA, VLA+, LA, LA+, SA, SA+ and HA, where VLA = very low achievement, LA = low achievement, SA = satisfactory and HA = high achievement) 6% indicated they typically achieved VLA, 3% achieved VLA+, 24% achieved LA, 24% achieved LA+, 26% achieved SA, 13% achieved SA+ and 5% achieved HA. Thirty-five percent reported having paid work experiences outside of the school (adolescents can legally work in Australia in their 14th year), and 51% indicated that they had at least one parent unemployed in the household.

At T2, participants were 212 Grade 10 students who had completed the survey at T1 when they were in Grade 8 (retention rate = 73%). These students were comprised of 106 (50%) females, 105 (50%) males, and one (< 1%) who did not indicate gender. Their ages ranged from 14.50-16.70 ($M = 14.55$, $SD = .54$). On the seven-point self-report measure of school achievement, 1% indicated they typically achieved VLA, 4% achieved VLA+, 25% achieved LA, 33% achieved LA+, 23% achieved SA, 12% achieved SA+ and 2% achieved HA. Forty-four percent reported having paid work experiences outside of the school, and 44% indicated that they had at least one parent unemployed in the household.

Materials

At T1, all students completed a survey that tapped career-related (maturity, barriers, indecision, decision-making self-efficacy), well-being (self-esteem, life satisfaction), social (school achievement, whether they had had paid work experience) and demographic (age and gender) variables. At T2, (two years after T1), the students remaining in the study completed a survey that again tapped career-related (maturity, indecision, decision-making self-efficacy) well-being (self-esteem, vigilance, maladaptive strategies) and social (school achievement, whether they had had paid work experience) variables.

Scales at T1

Career Maturity Attitude and Competency: The 72-item Australian version of the Career Development Inventory (Lokan, 1984) measures several aspects of career development, including career planning, awareness and use of resources, knowledge of the career development process, knowledge of the world of work, and knowledge and use of decision-making principles. Two composite scales can be calculated for the CDI, and are reported in this study. These are the Career Development Attitude composite (calculated by summing the 20-item attitudinal subscale of Career Planning and the 16-item attitudinal subscale of Career Exploration) and the Career Development Knowledge composite (calculated by summing the 24-item knowledge subscale of World of Work Information and the 12-item knowledge subscale of Career Decision Making). For both composites, higher scores indicate higher levels of that construct. Satisfactory reliability and validity data are reported in the manual (Lokan), which represent similar psychometric properties to those reported for the American inventory (Pinkney & Bozik, 1994). The internal reliability co-efficients for this sample were .90 for Career Development Attitude and .78 for Career Development Knowledge.

Career Indecision and Career Certainty: The 19-item Career Decision Scale (Osipow, 1987) consists of two subscales. These are the 16-item Career Indecision subscale that provides a measure

of career indecision, and the 2-item Career Certainty subscale that indicates the degree of certainty felt in having made a career decision. There is also an open-ended question that allows respondents to put their concerns in their own words, which was not used in this study. Higher scores indicate more certainty and indecision respectively. Internal reliability co-efficients have been consistently reported in the .80 range (Hartman, Fuqua & Hartman, 1983). The internal reliability for Career Indecision, the subscale reported in this study, was .87.

Barriers: The study used a modified 9-item version of the Perceived Barriers Scale (Howell, Frese, & Sollie, 1977), which asks students to indicate how much effect a range of barriers (e.g., parental interest, available courses) will have on them getting the job they desire. 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”). Higher scores indicate more perceived barriers. The internal reliability coefficient for the nine items was .80.

Career Decision-making Self-efficacy: The 25-item short version of the Career Decision-making Self-efficacy scale (Betz, Klein, & Taylor, 1996) measures confidence regarding ability to make career-oriented decisions. Higher scores indicate more career-related self-efficacy. Betz et al. reported adequate reliability and validity for the scale. The internal reliability for the present study was .95.

Self-esteem: The 10-item Rosenberg Self-esteem Scale (Rosenberg, 1965) measures the stable dimension of global self worth. It is the most widely used instrument for the measure of this construct (Blascovich & Tomaka, 1991). Higher scores indicate more self-esteem. The internal reliability coefficient for this sample was .83.

Satisfaction with Life: A single item was used to tap student’s General Life Satisfaction (“When you look at your life, are you: 4-point scale of “very satisfied” to “not satisfied”). Higher scores indicate less satisfaction.

Demographic and Social: Students were asked to indicate their age, gender, their typical school achievement level, and whether they had had paid work experience.

Scales at T2

The Career Decision Scale and Career Decision-Making Self-efficacy Scale, which were administered at T1, were also administered at T2. The other T2 scales were:

Career Maturity Attitude and Competency: The Career Maturity Inventory - Revised (Crites & Savickas, 1995) consists of two 25-item subscales that measure attitudes towards (Career Maturity Attitude), and competencies in (Career Maturity Competence), career decision-making. Numerous studies attest to the psychometric properties of this scale (Levinson, Ohler, Caswell, & Kiewra, 1998). Higher scores indicate more maturity. The internal reliability co-efficients with the present sample were .65 for Career Maturity Attitude and .54 for Career Maturity Competence.

Well-being: The Flinders Adolescent Decision-making Questionnaire (Mann, 1988) measures adaptive and maladaptive decision coping patterns of adolescents. There are four 6-item subscales that measure Self-esteem (measuring pre-decisional personal strengths), Vigilance (taking care about choices), Panic, Complacency and Cop-out (maladaptive strategies that tap constructs such as impulsiveness, haste, indifference and procrastination). High scores indicate higher levels of each construct. The internal reliabilities were .65 for Self-esteem, .71 for Vigilance, .78 for Complacency, .68 for Panic, and .81 for Cop-out.

Demographic and Social: Similar to T1, students were asked to indicate their age, gender, school achievement level and their paid work experience.

Procedure

T1 data were collected as part of a larger scale study when students across Grades 8-12 were surveyed (see Patton & Creed, 2001). The students in the present study were in Grade 8 at T1. T2

data were collected two years later when the T1 students were in Grade 10. These students were tracked as part of a longitudinal study into career development. At both times, teachers administered the surveys in class time, and in the students' homerooms. As 80 students were not available to complete the T2 survey, this meant that there were 212 students who completed both T1 and T2 surveys. We had little information on the students who dropped out of the study. A small number was absent from the school when the T2 survey was administered, but mostly T2 students were missing as they had left the school, either to transfer to another school or to join the labour market, or declined to participate in this phase of the study.

Following Vondracek et al. (1990), we used Item 1 of the Career Decision Scale ("I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice") to allocate the students to career decided and career undecided groups. Those who responded to this item with "exactly like me" or "very much like me" were allocated to the decided group, whereas those who responded "only slightly like me" or "not at all like me" were allocated to the undecided group. This was done for students at T1, T2 and across T1-T2. This then allowed two groups at T1, students who were career decided ($n = 174$, 61%) and students who were career undecided ($n = 112$, 39%; 6 students were omitted as they failed to complete all scales). There were two groups at T2, those who were career decided ($n = 117$, 56%) and those who were career undecided ($n = 94$, 44%; 1 student was omitted who failed to complete all scales). There were four groups across T1-T2. These were students who were decided at T1 and decided at T2 (decided/decided, $n = 74$, 35%), those undecided at T1/undecided at T2 (undecided/undecided, $n = 44$, 21%), those undecided at T1/decided at T2 (undecided/decided, $n = 42$, 20%) and those decided at T1/undecided at T2 (decided/undecided, $n = 49$, 23%).

Results

Attrition Analyses

A series of chi-square and t-test analyses was conducted to test if the students who completed T1 and T2 surveys (the "stayers") differed at T1 from the students who completed the T1 survey only (the "leavers"). No differences were identified between the two groups on their Age, Gender, Work Experience, Career Development Attitude, Career Development Knowledge, Career Certainty, Career Indecision, Barriers, Career Decision-making Self-efficacy, Self-esteem, and Satisfaction with Life (with Bonferroni corrections of $.05/12 = p < .004$). The two groups did differ on School Achievement Level, $t(265) = -4.31$, $p < .001$, meaning that those who did not complete T2 surveys reported lower levels of achievement. Notwithstanding this one positive result, these analyses gave confidence that the leavers from the study were not markedly different from the stayers, and that the subsequent longitudinal analyses were not conducted using an overly biased sample.

Decided and Undecided at T1

A between-groups multivariate analysis of variance and a series of chi-square tests were conducted to examine differences between the students who were decided at T1 and those who were undecided at T1, on the T1 variables. The chi-square tests indicated that the two groups did not differ significantly (Bonferroni correction of $.05/2 = p < .025$) on proportions of Gender, but did differ on reported Work Experience, $\chi^2(1) = 11.15$, $p = .001$, with the decided group having a larger proportion reporting paid-work experiences than the undecided group.

For the MANOVA, the dependent variables were Career Development Attitude, Career Development Knowledge, Career Indecision, Barriers, Career Decision-making Self-efficacy, Self-esteem, Life Satisfaction, and School Achievement Level. The independent variables were Group (decided and undecided) and Gender (male and female). There were significant multivariate main effects for Group, $F(8, 214) = 6.31$, $p < .001$, and Gender, $F(8, 214) = 4.00$, $p < .001$, but no Group x Gender interaction effect. Significant univariate Group effects ($.05/8 = p < .006$) were identified for Career Development Attitude, $F(1, 221) = 32.78$, $p < .001$, Career Decision-making Self-efficacy,

$F(1, 221) = 22.75, p < .001$, and Life Satisfaction, $F(1, 221) = 9.63, p = .002$. There was also a trend for a difference on Self-esteem, $F(1, 221) = 6.45, p = .01$. The undecided students had lower levels of Career Development Attitude, Career Decision-making Self-efficacy, Life Satisfaction and Self-esteem. A significant univariate Gender effect ($p < .006$) was identified for Career Development Knowledge, $F(1, 221) = 24.94, p < .001$, indicating girls had higher Career Development Knowledge than boys. Summary data for these analyses are reported in Table 1.

Table 1
Summary data for Females, Males and Total for Decided and Undecided at T1

Variables	Gender	Decided		Undecided		Total	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Career Development Attitude	<i>F</i>	97.33	18.01	82.95	15.19	91.06	18.24
	<i>M</i>	97.06	15.66	85.23	18.21	92.79	17.50
	<i>T</i>	97.19	16.79	83.93	16.51	91.89	17.87
Career Development Knowledge	<i>F</i>	21.06	5.31	21.25	5.33	21.15	5.30
	<i>M</i>	17.01	5.17	18.03	5.61	17.38	5.33
	<i>T</i>	18.99	5.60	19.86	5.66	19.34	5.63
Barriers	<i>F</i>	20.97	6.35	21.22	4.71	21.08	5.67
	<i>M</i>	21.42	5.80	20.71	4.68	21.16	5.41
	<i>T</i>	21.20	6.06	20.99	4.67	21.12	5.54
Career Indecision	<i>F</i>	50.00	8.63	46.51	8.68	48.48	8.78
	<i>M</i>	46.20	9.41	46.97	8.48	46.48	9.05
	<i>T</i>	48.06	9.20	46.71	8.55	47.52	8.95
Career Decision-making Self-efficacy	<i>F</i>	91.45	18.02	76.41	18.28	84.90	19.54
	<i>M</i>	88.91	16.23	81.44	16.28	86.21	16.57
	<i>T</i>	90.16	17.11	78.59	17.52	85.53	18.15
Self-esteem	<i>F</i>	30.39	5.32	27.41	5.30	29.09	5.49
	<i>M</i>	29.57	5.00	29.03	4.48	29.37	4.78
	<i>T</i>	29.97	5.14	28.11	4.99	29.23	5.15
Satisfaction with Life	<i>F</i>	1.80	0.73	2.22	0.88	1.98	0.82
	<i>M</i>	1.93	0.83	2.21	0.83	2.03	0.84
	<i>T</i>	1.87	0.78	2.25	0.86	2.00	0.83
School Achievement	<i>F</i>	4.65	1.32	4.27	1.27	4.49	1.30
	<i>M</i>	4.04	1.48	4.31	1.38	4.14	1.44
	<i>T</i>	4.34	1.43	4.29	1.31	4.32	1.38

Note. Sample sizes: Decided (66 females, 69 males), Undecided (51 females, 39 males) Total (117 females, 108 males).

Decided and Undecided at T2

Similar analyses were conducted to test for differences between the students who were decided and undecided at T2, on the T2 variables. A larger proportion of the undecided group at T2 were female, $\chi^2(1) = 10.28, p = .001$, but there was no difference between the two groups on Work Experience at T2 (Bonferonni correction = $.05/2 = p < .025$). For the MANOVA, the dependent variables were Career Maturity Attitude, Career Maturity Competency, Career Indecision, Career Decision-making Self-efficacy, Self-esteem, Vigilance, Panic, Complacency, Cop-out and School Achievement Level. The independent variables were Group (decided and undecided) and Gender (male and female). There was a significant multivariate main effect for Group, $F(10, 196) = 5.62, p <$

.001, but no main effect for Gender, and no Gender x Group interaction effect. There were significant univariate Group effects ($.05/10 = p < .005$) for Career Maturity Attitude, $F(1, 205) = 21.78, p < .001$, Career Indecision, $F(1, 205) = 27.04, p < .001$, Career Decision-making Self-efficacy, $F(1, 205) = 30.36, p < .001$, and Self-esteem, $F(1, 205) = 18.38, p < .001$. There was also a trend for a difference on Vigilance, $F(1, 205) = 6.98, p = .009$, and Panic, $F(1, 205) = 4.83, p = .03$. The undecided students had lower levels of Career Maturity Attitude and Career Decision-making Self-efficacy, more Career Indecision, lower levels of Self-esteem and Vigilance, and higher levels of Panic. Summary data for these analyses are reported in Table 2.

Table 2
Summary data for Females, Males and Total for Decided and Undecided at T2

Variables	Gender	Decided		Undecided		Total	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Career Development Attitude	<i>F</i>	15.66	3.44	12.68	2.98	14.00	3.51
	<i>M</i>	15.32	3.83	13.80	2.99	14.81	3.62
	<i>T</i>	15.46	3.66	13.10	3.02	14.40	3.58
Career Development Competency	<i>F</i>	16.72	3.15	17.88	3.10	17.37	3.16
	<i>M</i>	17.22	3.22	16.80	2.34	17.08	2.95
	<i>T</i>	17.02	3.19	17.48	2.87	17.22	3.05
Career Indecision	<i>F</i>	27.81	7.08	37.76	7.67	33.35	8.90
	<i>M</i>	30.57	11.29	34.20	9.24	31.81	10.73
	<i>T</i>	29.44	9.85	36.44	8.42	32.59	9.85
Career Decision-making Self-efficacy	<i>F</i>	95.26	17.88	81.20	12.36	87.43	16.54
	<i>M</i>	92.72	16.87	82.69	12.66	89.31	16.22
	<i>T</i>	93.76	17.26	81.76	12.43	88.36	16.37
Self-esteem	<i>F</i>	12.19	3.26	10.17	2.75	11.07	3.14
	<i>M</i>	11.97	2.92	10.46	2.50	11.46	2.86
	<i>T</i>	12.06	3.05	10.28	2.65	11.26	3.01
Vigilance	<i>F</i>	11.57	3.58	10.27	2.89	10.85	3.27
	<i>M</i>	11.57	3.47	10.46	2.57	11.19	3.23
	<i>T</i>	11.57	3.80	10.34	2.77	11.02	3.24
Complacency	<i>F</i>	3.36	2.57	4.54	3.16	4.08	2.97
	<i>M</i>	5.07	3.98	4.60	3.24	5.25	3.74
	<i>T</i>	4.37	3.56	5.00	3.20	4.66	3.41
Panic	<i>F</i>	5.87	3.70	7.34	3.53	6.69	3.66
	<i>M</i>	6.54	3.72	7.31	3.09	6.81	3.52
	<i>T</i>	6.27	3.71	7.33	3.36	6.75	3.59
Cop-out	<i>F</i>	3.21	2.65	4.68	3.88	4.03	3.45
	<i>M</i>	5.24	3.95	5.09	3.28	5.18	3.72
	<i>T</i>	4.41	3.61	4.83	3.65	4.60	3.62
School Achievement	<i>F</i>	4.34	1.05	4.15	1.14	4.24	1.10
	<i>M</i>	4.10	1.34	4.09	1.15	4.10	1.27
	<i>T</i>	4.20	1.23	4.13	1.14	4.17	1.19

Note. Sample sizes: Decided (47 females, 68 males), Undecided (59 females, 35 males), Total (106 females, 103 males)

Decided and Undecided across T1- T2

The analyses were repeated to test for differences among the four groups of students across the two times (decided/decided, undecided/undecided, undecided/decided, decided/undecided) at T1 on

the T1 variables, and at T2 on the T2 variables. At T1, the chi-square analyses indicated that the four groups differed significantly (Bonferonni correction = $.05/2 = p < .025$) on proportions of Gender, $\chi^2(3) = 9.80, p = .02$, and Work Experience, $\chi^2(3) = 11.48, p = .009$. For gender, there were more females in the undecided/undecided group than the other three groups. For Work Experience, about half of the students in the decided/decided group reported paid-work experience, whereas in the other three groups the proportion was much less. This was particularly so for the undecided/undecided group, of which very few students reported paid-work experiences.

For the MANOVA at T1, there were significant multivariate main effects for Group, $F(24, 468) = 2.28, p = .001$, and Gender, $F(8, 154) = 2.37, p = .02$, but no significant interaction effect. There were significant univariate Group effects ($.05/8 = p < .006$) for Career Development Attitude, $F(3, 161) = 8.39, p < .001$, Career Decision-making Self-efficacy, $F(3, 161) = 5.41, p = .001$, and Satisfaction with Life, $F(3, 161) = 5.68, p = .001$. There was also a trend for a difference on Self-esteem, $F(3, 161) = 2.65, p = .05$. Tukey HSD post-hoc tests indicated that the decided/decided group had higher levels of Career Development Attitude than the undecided/decided ($p = .001$) and the undecided/undecided groups ($p < .001$), and further that the decided/undecided group had higher levels than the undecided/decided ($p = .026$) and the undecided/undecided groups ($p = .002$). For Career Decision-making Self-efficacy, the decided/decided group had higher levels than the undecided/decided ($p = .04$) and the undecided/undecided ($p = .001$) groups, and that the decided/undecided had higher levels than the undecided/undecided group ($p = .05$). For Satisfaction with Life, the decided/decided had higher levels than the undecided/decided ($p = .002$) and the undecided/undecided ($p = .017$) groups. For the Self-esteem trend, the decided/decided had higher levels than the undecided/undecided ($p = .019$). For the significant univariate Gender effect ($p < .005$), girls reported higher levels of Career Development Knowledge than males, $F(1, 161) = 17.36, p < .001$. Summary data are reported in Table 3.

At T2, the chi-square analyses indicated that the four groups did not differ significantly ($p = .05/2 = .025$) on reported Work Experience, but did differ on proportions of Gender, $\chi^2(3) = 10.63, p = .014$, with females being over-represented in the undecided/undecided group. At T2 for the MANOVA, there were significant multivariate main effects for Group, $F(30, 576) = 2.30, p < .001$, and Gender, $F(10, 190) = 1.97, p = .039$, but no significant interaction effect. There were significant univariate Group effects ($.05/10 = p < .005$) for Career Maturity Attitude, $F(3, 199) = 7.24, p < .001$, Career Indecision, $F(3, 199) = 8.83, p < .001$, Career Decision-making Self-efficacy, $F(3, 199) = 13.08, p < .001$, and Self-esteem, $F(3, 199) = 6.59, p < .001$. There was also a trend for a difference on Vigilance, $F(3, 199) = 3.41, p = .019$. Post-hoc tests indicated that the decided/decided group had higher levels of Career Maturity Attitude than the decided/undecided ($p = .001$) and the undecided/undecided groups ($p = .002$), and further that the undecided/decided group had higher levels than the decided/undecided ($p = .004$) and the undecided/undecided groups ($p = .006$). For Career Indecision, the decided/decided had lower levels than the decided/undecided ($p < .001$) and the undecided/undecided groups ($p = .001$), and the undecided/decided had lower levels than the decided/undecided ($p = .001$) and the undecided/undecided ($p = .001$). For Career Decision-making Self-efficacy, the decided/decided group had higher levels than the undecided/decided ($p = .01$), the decided/undecided ($p < .001$) and the undecided/undecided ($p < .001$) groups. For Self-esteem, the decided/decided had higher levels than the decided/undecided ($p = .001$) and the undecided/undecided ($p = .002$). Lastly, for the Vigilance trend, the decided/decided had higher levels than the undecided/undecided group ($p = .007$). There was a significant univariate Gender effect ($.05/10 = p < .005$) for Complacency, $F(1, 199) = 8.73, p = .004$, and a trend effect for Cop-out, $F(1, 199) = 7.57, p = .006$, indicating higher levels of Complacency and Cop-out for males than females. Summary data are reported in Table 4.

Table 3
 Summary data for Decided/Decided, Decided/Undecided, Undecided/Decided and Undecided/Undecided Groups at T1

Variables	Gender	Decided/ Decided		Undecided/ Decided		Decided/ Undecided		Undecided/ Undecided		Total	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Career Development Attitude	<i>F</i>	99.54	19.26	88.00	14.28	99.00	15.24	81.80	15.90	82.74	18.05
	<i>M</i>	99.59	16.94	84.77	20.72	93.50	14.07	84.10	14.99	92.49	18.52
	<i>T</i>	99.57	17.82	86.03	18.33	97.26	14.92	82.46	15.46	92.62	18.22
Career Development Knowledge	<i>F</i>	20.96	5.17	24.36	2.56	22.19	5.19	19.92	5.24	21.55	5.04
	<i>M</i>	16.97	4.93	17.23	5.58	18.58	5.68	20.40	5.95	17.73	5.39
	<i>T</i>	18.70	5.38	20.00	5.79	21.05	5.54	20.06	5.37	19.79	5.53
Barriers	<i>F</i>	20.19	6.54	21.57	5.32	21.19	5.82	22.24	4.68	21.25	5.64
	<i>M</i>	20.65	6.50	21.07	4.43	23.50	3.83	19.70	4.42	21.08	5.39
	<i>T</i>	20.45	6.47	21.26	4.73	21.92	5.33	21.51	4.69	21.17	5.52
Career Indecision	<i>F</i>	51.04	8.96	48.07	7.80	49.92	6.96	46.52	7.02	49.02	7.81
	<i>M</i>	47.18	10.19	46.86	8.32	43.58	5.81	49.80	9.26	46.87	9.00
	<i>T</i>	48.85	9.78	47.33	8.03	47.92	7.19	47.46	7.73	48.03	8.42
Self-esteem	<i>F</i>	31.38	4.65	29.00	6.24	30.00	5.39	27.24	4.93	29.48	5.36
	<i>M</i>	30.47	5.47	29.41	5.05	27.58	4.64	28.60	4.20	29.49	5.10
	<i>T</i>	30.87	5.11	29.25	5.46	29.24	5.23	27.63	4.71	29.49	5.23
Career Decision-making Self-efficacy	<i>F</i>	94.08	18.87	81.79	18.28	92.04	17.80	78.12	12.57	87.22	18.03
	<i>M</i>	91.85	18.02	84.55	15.14	81.00	11.92	79.30	18.84	86.51	16.99
	<i>T</i>	92.82	18.27	83.47	16.23	88.55	16.83	78.46	14.34	86.89	17.51
Satisfaction with Life	<i>F</i>	1.58	0.64	2.21	0.89	2.04	0.77	2.16	0.80	1.97	0.80
	<i>M</i>	1.79	0.81	2.36	0.79	2.17	0.84	2.30	0.82	2.08	0.83
	<i>T</i>	1.70	0.74	2.31	0.82	2.08	0.78	2.20	0.80	2.02	0.81
School Achievement	<i>F</i>	4.73	1.08	4.93	1.49	4.77	1.51	4.28	1.02	4.65	1.27
	<i>M</i>	4.35	1.52	4.18	1.37	3.75	1.14	4.70	1.57	4.26	1.43
	<i>T</i>	4.52	1.35	4.47	1.44	4.45	1.47	4.40	1.19	4.47	1.35

Note. Sample sizes for Decided/Decided (26 females, 34 males), Undecided/Decided (14 females, 22 males), Decided/Undecided (26 females, 12 males), Undecided/Undecided (25 females, 10 males), for Total (91 females, 78 males).

Table 4: Summary data for Decided/Decided, Decided/Undecided, Undecided/Decided and Undecided/Undecided Groups at T2

Variables	Gender	Decided/ Decided		Undecided/ Decided		Decided/ Undecided		Undecided/ Undecided		Total	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Career Maturity Attitude	<i>F</i>	15.66	3.71	15.67	2.90	12.90	3.11	12.52	2.92	14.03	3.51
	<i>M</i>	15.37	3.83	15.50	3.77	13.40	2.74	14.33	3.31	14.86	3.59
	<i>T</i>	15.49	3.75	15.56	3.44	13.10	2.95	13.14	3.15	14.44	3.57
Career Maturity Competence	<i>F</i>	16.59	3.07	17.00	3.40	18.03	3.08	17.66	3.19	17.34	3.16
	<i>M</i>	17.54	2.82	16.73	3.83	17.40	2.01	16.00	2.56	17.08	2.96
	<i>T</i>	17.12	2.95	16.83	3.64	17.78	2.69	17.09	3.06	17.21	3.06
Career Indecision	<i>F</i>	28.06	7.76	27.27	5.56	36.55	7.21	38.86	8.17	33.28	8.91
	<i>M</i>	30.78	12.36	29.88	9.62	36.20	9.36	31.53	8.68	31.73	10.75
	<i>T</i>	29.59	10.62	28.93	8.39	36.41	8.06	36.36	8.96	32.51	9.87
Decision-making Self-efficacy	<i>F</i>	96.44	18.20	82.73	17.50	82.59	12.39	80.31	12.36	87.63	16.50
	<i>M</i>	97.78	14.65	85.15	17.70	82.75	11.95	82.60	13.98	89.38	16.29
	<i>T</i>	97.19	16.19	87.93	17.79	82.65	12.09	81.09	12.82	88.49	16.38
Self-esteem	<i>F</i>	12.38	3.13	11.80	3.61	10.00	2.63	10.41	2.91	11.10	3.14
	<i>M</i>	12.32	3.22	11.42	2.39	10.75	2.56	10.07	2.40	11.45	2.88
	<i>T</i>	12.34	3.16	11.56	2.86	10.31	2.62	10.30	2.72	11.27	3.01
Vigilance	<i>F</i>	11.66	3.82	11.40	3.14	10.69	3.20	9.93	2.58	10.88	3.27
	<i>M</i>	12.05	3.69	11.00	3.01	10.95	2.50	9.80	2.60	11.24	3.22
	<i>T</i>	11.88	3.72	11.15	3.02	10.80	2.91	9.89	2.55	11.05	3.24
Complacency	<i>F</i>	3.53	2.26	3.00	2.36	3.97	3.01	5.17	3.19	4.03	2.94
	<i>M</i>	4.73	4.20	5.50	3.69	5.40	3.52	5.87	2.92	5.23	3.75
	<i>T</i>	4.21	3.64	4.59	3.46	4.55	3.27	5.41	3.08	4.62	3.41
Panic	<i>F</i>	5.78	3.45	6.07	4.30	7.00	3.50	7.48	3.51	6.63	3.63
	<i>M</i>	6.51	3.69	6.73	3.84	7.20	3.00	7.47	3.36	6.84	3.52
	<i>T</i>	6.19	3.58	6.49	3.98	7.08	3.26	7.48	3.42	6.73	3.57
Cop-out	<i>F</i>	3.66	2.59	2.27	2.60	4.41	3.96	4.69	3.67	3.95	3.38
	<i>M</i>	4.63	3.76	5.96	4.09	5.20	3.33	4.93	3.33	5.13	3.70
	<i>T</i>	4.21	3.31	4.61	4.01	4.73	3.70	4.77	3.52	4.53	3.58
School Achievement Level	<i>F</i>	4.28	0.99	4.47	1.19	4.34	1.20	3.97	1.09	4.24	1.11
	<i>M</i>	4.05	1.36	4.19	1.36	4.25	1.12	3.87	1.19	4.10	1.28
	<i>T</i>	4.15	1.21	4.29	1.29	4.31	1.16	3.93	1.11	4.17	1.19

Note. Sample sizes: Decided/Decided (32 females, 41 males), Undecided/Decided (15 females, 26 males), Decided/Undecided (29 females, 20 males), Undecided/Undecided (29 females, 15 males), Total (105 females, 102 males).

Discussion

The present study has provided relevant findings on a range of career development and well-being variables for adolescents depending on their decisional state. In general, the findings indicated that persistent career indecision in adolescence was related to lower scores on a number of career development and well-being variables. Conversely, young people who reported consistent decidedness on both testing occasions reported higher scores on both sets of variables, while developmental indecisive adolescents fell somewhere in-between and varied depending on whether they were undecided or decided.

In exploring specific hypotheses, it was found that young people at T1 and T2 could be grouped in relation to being decided or undecided on the basis of responses to a number of measures. In particular, the decided group at T1 reported higher levels of career planning/exploration, career decision-making self-efficacy, life satisfaction and self-esteem. This finding also held at T2, when the decided students had higher levels of career maturity and career decision-making self-efficacy, less career indecision, higher levels of self-esteem and vigilance, and lower levels of decision-making panic. In addition, young people who were decided were more likely to be engaged in paid work experience at T1, although not at T2. This latter finding may be explained by the age difference, that is, a higher proportion of Grade 10 students (as opposed to when they were Grade 8 students at T1) would be expected to be working. Research into the impact of paid work experience on career development variables generally has produced mixed findings. Part-time employment has been found to be positively related to work attitudes, career aspirations (Loughlin & Barling, 1998) and career planning and exploration, but to be unrelated to knowledge about careers (Creed & Patton, 2003). Little research to date has focused on career indecision and paid work experience, and where this issue has been examined no relationship has been found (Niles & Herr, 1989; Skorikov & Vondracek, 1997). Thus, it is an important finding of the present study that those having paid work experience were more decided in relation to their careers, although other longitudinal studies will need to be conducted to determine the causal relationships between work and being more decided.

In exploring the group differences, young people in the decided/decided group at T1 had more work experience and were more positive on career maturity, career decision-making self-efficacy, life satisfaction and self-esteem than each of the other three groups. At T2, the decided/decided group also reported lower indecision than both the decided/undecided and undecided/undecided groups, higher career decision-making self-efficacy than the undecided/decided groups, and higher vigilance in decision making than the group undecided at both times. These data clearly illustrate a negative relationship between career indecision and the career related and well-being variables.

The undecided-undecided group reported very little paid work experience at T1 and T2. Contrary to the findings of Skorikov and Vondracek (1997) who found no relationship between paid work experience and career indecision, these data indicate that this is an important area for further exploration. In addition, and as predicted, this group fared worse on many of the career development variables than the other three groups, suggesting that chronic indecision is much more of a disadvantage than developmental indecision (i.e., the groups who changed decision status across time). Importantly, the undecided/undecided group also fared more poorly on the well-being

measures used, indicating that being chronically undecided has implications for psychological health.

Also notable in the present study were the findings highlighting gender differences. At T2, more females than males were in the undecided group, and at T1 more females were in the undecided/undecided group than each of the other three groups. In addition, as reported in other studies (e.g., Patton & Creed, 2001), females reported higher scores than males on career knowledge. Further, at T2, males were more likely to be complacent in relation to decision-making and more likely to use maladaptive decision-making strategies. The relationship between higher scores on career development knowledge and on career indecision represents a complex picture. It is possible that these findings reflect the complexity of females' career decision-making processes, which still occur within a context of the dilemma between career and motherhood.

Research has repeatedly supported theoretical propositions (e.g., Super, 1990) in showing that career maturity is a predictor of successful post-school transition. For example, Patton, Creed, and Muller (2002) reported that students who leave school to continue on to full-time further study can be characterized while at school as having higher levels of self-reported school achievement, higher levels of well-being, and higher levels of career development knowledge than students who, for instance, entered the labour force. While a number of writers have commented that career indecision may be an ongoing part of the career decision-making process, "a sign of transformation in progress" (Savickas, 1994, p. 54), it is clear that the lower scores on career development related variables reported by young people in the undecided-undecided group warrant particular concern in relation to their career decision-making behaviours and well-being during adolescence.

The present study has identified important issues in relation to adolescent career maturity and career indecision. However, further research needs to tease out the processes that occur developmentally in relation to adolescent career decision-making and the relationship this has with well-being, and to follow students in high school through to their final year. In addition, the importance of paid work experience in career decidedness needs to be explored further, along with the relationship between the nature of that work experience and student career aspirations. Finally, the impact of career development curricula on career development variables needs considerable work. The data from the present study have highlighted the experiences of a group of adolescents who are undecided about their career plans across two years of their high school period. Research needs to identify the underlying problems for these young people, and develop and test the efficacy of intentional career development support during adolescence.

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For correspondence:

Associate Professor Peter Creed
School of Applied Psychology
Griffith University - Gold Coast Campus
PMB 50 Gold Coast Mail Centre 9726
Queensland, Australia
Email: p.creed@griffith.edu.au