Decision Style and Information Gathering

Adolescent Decision Making Styles and "Fact Finding"

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Daily we engage in many trivial and non-trivial decisions that are a reflection of the interaction between self and environment. The importance of the decision making process has made it an influential part of vocational counselling and research. The counsellor and educator have much to gain from decision model focusing as they do on the internal psychological processes an individual uses to resolve decision issues. Increasingly researchers are examining an array of descriptive and prescriptive models of decision making and their applicability to vocational counselling and development (eg., Blustein & Phillips, 1989; Harren, 1979; Herr & Cramer, 1988; Horan, 1979; Hesketh, 1982).

Harren (1979) draws a broad picture of the decision making process suggesting that it reflects a meeting of individual, developmental and contextual factors. According to Harren the decision making process occurs in four sequential stages, Awareness, Planning, Commitment and Implementation. Awareness refers to an awareness of the "self-in-situation" an appraisal of past decisions and present state. Planning involves the search for information about the self and the decision task, the process

of expanding and narrowing choices. Commitment refers to announcing intentions and obtaining feedback from those around us about our choice, and finally we Implement our decision. Harren also stresses that individual differences (eg., decision making style and self-concept), developmental progress, and the context surrounding the decision (eg., time pressure and the involvement of others) influences progress through the decision process .
Harren's model suggests a number of important areas for research. This research focuses on the relationship between individual differences in decision making style and the planning stage. Evidence and theory suggest that decision style relates to information gathering. Accordingly, the general aim of this paper is to investigate the relationship between one model of decision

style, Janis and Mann's (1977) conflict model, and final year secondary student's self-reported use of information sources to obtain information about themselves and the world of work.
Horan (1979) criticised counselling practitioners and theorists on the grounds that while many acknowledged that the primary role of a counsellor was assisting clients with decision making, the advances in decision making theory had rarely made an impact on counselling. The last decade has seen an increasing number of theorists who have examined the issue of decision making especially in the field of career development (eg., Blustein, Pauling, DeMania & Faye, 1994; Hesketh, 1982). A criticism of recent research is that it has concentrated on the vocational decisions of adults, particularly university undergraduates. While research indicates that there are similarities between adolescent and adults in their decision making competencies (eg., Lewis, 1981; Mann, Harmoni & Power, 1989; Steinberg, 1985) there is little understanding of how adolescents, especially those under 18, make decisions. This is surprising considering that perhaps one of the most stressful transition is between secondary schooling and the world beyond.
Many models attempt to explain the process of career decision making (eg., Gati, 1986; Pitz & Harren, 1980). They often portray decisions as they should be made (prescriptive), logical sequences that involve the identification, exploration and evaluation of alternatives. While research has consistently shown that decisions made under these conditions can be more effective (eg., Caldwell & O'Reilly, 1985; Hesketh, 1982) analysis of the way we do make decisions (descriptive) indicate that many decisions are made under non-rational conditions. For example, Etzioni (1988) proposes a model of decision making that involves a logical-empirical dimension, the use of inferences and facts, and a normative-affective dimension, the influence of emotions and values.
Most descriptive models of decision making indicate that a number of ways for an individual to approach and resolve a decision

task. Etzioni (1988) describes three approaches: decisions made purely on the basis of emotional involvement and values where information processing is often excluded; decisions that are rationally considered but are coloured or subject to short cuts because of emotions and values; and decisions where emotions and values require rational decision making. Other researchers (eg., Arroba, 1977; Harren, Kass, Tinsley & Moreland, 1978; Janis & Mann, 1977; Jepsen, 1974) have also described different approaches to decision making. For example, Harren et al (1978) propose three decision styles: rational, intuitive, and dependent; Jepsen (1974) describes 12 strategy types while Arroba (1974) describes six decision making types and reflects that the strategy used may change depending on the importance of the decision. Finally, Janis and Mann (1977) propose four decision styles: vigilant, panic, copout, and complacency that are "manifested to varying degrees under different conditions" (p12). The models such as those described above incorporate a number of common themes. First, individuals use different strategies when faced with a decision task and are not consistent in the strategy they use. Second, the gathering and appraisal of information are an important part of decision making. Finally, all describe decision making styles along an internal, active to external, passive continuum. The active referring to planned, logical, rational decisions, while the passive describing a decision style that is complacent, compliant and dependent.

The Conflict Decision Model

Drawing on theories of information processing and psychology Irving Janis and Leon Mann (1977) describe a 'conflict' model of decision making. They were particularly concerned with the decisions made in the presence of Abelson's (1963) "hot" cognition's "when human beings are required to make decisions on highly ego-involving issues" (Janis & Mann, 1977, p 46). Such decisions might be a choice of career, marriage partner, or moving cities and are vital personal decisions. Janis and Mann identify four decision making styles that allow an individual to cope with stressful decisions. Each style, or pattern, is determined by a matrix of two antecedents; time pressure, and, optimism/pessimism about finding a solution to the dilemma, and are also related to a particular level of psychological stress. These decision coping patterns are:

1. Vigilance: When a person is optimistic about finding a solution and believes there is sufficient time to make one. The individual searches carefully for a wide variety of alternatives and objectively weighs the costs and benefits before making the final decision.
2. Panic (hyper vigilance): When a person is optimistic about finding a solution but believes there is insufficient time to

make one. Panic and high stress occur that results in the individual settling for hastily contrived solutions that relieves the stress.
3. Copout (defensive avoidance): When the individual is pessimistic about finding a solution they escape by procrastinating (putting off a decision), shifting responsibility onto someone else (buck passing), or rationalising the least objectionable alternative.
4. Complacency: The individual "exhibits unconflicted adherence or unconflicted change", whenever an individual dismisses a challenge or threat as posing no problem and continues unchanged, or reflexively adapts whatever is offered.
In addition Janis and Mann's decision making styles can also be described under two categories: adaptive and maladaptive coping behaviours. An adaptive behaviour is the vigilant decision, careful and deliberate, while maladaptive, refers to decision patterns that fail to meet the criteria for "high quality information processing" (Janis & Mann, 1977: 77).

Information Seeking
Janis and Mann (1977) present seven procedural criteria that characterise the individual making high quality decisions:

The decision maker to the best of his ability and within his information-processing capabilities:

1. thoroughly canvasses a wide range of alternative courses of action;
2. surveys the full range of objectives to be fulfilled and the values implicated by the choice;
3. carefully weighs whatever he knows about the costs and risks of negative consequences, as well as the positive consequences, that could flow from each alternative;
4. intensively searches for new information relevant to further evaluation of the alternatives;
5. correctly assimilates and takes account of any new information or expert judgement to which he is exposed, even when the information or judgement does not support the course of action he initially prefers;
6. re-examines the positive and negative consequences of all know alternatives, including those originally regarded as unacceptable, before making a final choice;
7. makes detailed provisions for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various risks were to materialise (p 12).

Decision making models, such as Janis and Mann's (1977) reinforce

the central concept of the gathering and processing of information about options and consequences. Other researchers, such as Jepsen and Dilley (1974) and Harren (1979) also describe decision making as involving the organisation of information obtained from within and outside the individual, the appraisal of alternatives, and commitment to a course of action. Similar frameworks have been provided for career counselling (eg., Kinnier & Krumboltz, 1984) and research has shown that models such as Janis and Mann's (1977) are related to career planning (eg., Burnett, Mann & Beswick, 1989).

The requirement for students to have information in order to make high quality decision is accepted by education authorities throughout the industrialised world. The amount of vocational information now available in Australian schools has exploded over the last decade. Formal resources provided by government agencies, business, and universities, have substantially increased in scope, medium of presentation, and complexity (eg., Chapman, 1993). Other resources such as friends, family, the electronic media, and part-time work experience also offer the bemused Year 12 a variety of information about themselves and the world of work. Such information is critical during the process of decision making. Theorists such as Roe (1951), Super (1957), Crites (1969) and Holland (1985) have made it abundantly clear that the more information about the self and occupations an individual has the more likely individuals are to make effective decisions.

Research has indicated that there is a trend over the years of schooling for students to more willing to engage in information gathering behaviour. For example, Jepsen (1975) noted that by Year 12 there was a greater degree of resource utilisation and more confident feelings about vocational decisions. Jepsen also suggested that final year students were more interested in processing occupational information than in choosing among

occupational goals. Influential theorists, such as Super (1957) and Harren (1979), support the concept that adolescents engage in a greater degree of resource utilisation. However, researchers and counsellors have continually noted that some individuals engage in information gathering more than others. Many structural and individual factors are suggested to account for this difference. O'Reilly, (1982) suggests that the accessibility of sources is a major influence on resource utilisation while Borgida and Nesbitt (1977) suggest that individuals have distinct preferences for different types of information. Research also suggests that decision styles may reflect important differences within the student population (eg., Blustein & Phillips, 1988; Burnett et al, 1989; Harren, 1979; Hesketh, 1982). If decision making styles do influence individual information gathering, programs to teach decision making will have positive effects on

student decisions. This would enable students to build on their decision skills so that they may not only make a smoother transition from high school but also face the other major transitions in their life with confidence. Such knowledge would also enable the counsellor to more accurately assess not only the information needs of the individual but also how the student may react to the information and to the decision process itself.

Method

Two administrations of a larger survey exploring student decision making about post-high school options are presented in this paper.

Participants

The participant pool for this study consisted of all students (N=310) enrolled in their final year at four metropolitan government high schools in an Australian Capital City. The first administration occurred at the end of first semester and consisted of 241 respondents (118 males and 123 females). The second survey consisted of 156 respondents (71 male, 85 female) of which 131 were traceable from the first administration. At the time of the first administration the students were aged between 15 years 8 months to 18 years four month, the average being 16 years 9 months.

The Schools

The schools chosen were four coeducational government schools. They represented distinct geographical and socio-economic areas within the metropolitan region. School One is a large school situated in the northern coastal corridor of the metropolitan region. The school's enrols more than 1100 students. The region is currently one of the fastest population growth centres in Australia (ABS, 1991).The area is a well-established commuter suburb with the majority of employment in the central business district and increasing service opportunities in a northern satellite city. Access to employment and educational opportunities is by car, bus and connections to the northern train line. School Two is in the central coastal corridor of the metropolitan region with student enrolments up to 800 students. The region is a well-established commuter suburb with access to the central business district and a secondary city centre and some limited service and light industry. Access to these areas is by bus and car. The region also hosts one of the metropolitan universities. School Three is situated in the northern inland region of the metropolitan area with student enrolments over 1100. The school provides some boarding facilities for students from the rural areas. The school is situated in a satellite city

where light industry and agricultural activities occur. Access to

the central business district is available by car, bus and train. School Four is situated on the outskirts of the southern inland region of the metropolitan area with student enrolments of up to 800. The region has limited service and agricultural industries and is generally a commuter suburb for the central business district and the southern heavy industry region. Access to the central business district is available by bus, car and train, and to the heavy industry strip by car and limited bus services.

Instrumentation

The Adolescent Decision Making Questionnaire (Mann, Harmoni & Power, 1989). This questionnaire assesses decision making self-confidence and four coping styles - vigilance, panic, copout and complacency. The questionnaire is based on The Flinders Decision Making Questionnaire (DMQ) (Friedman & Mann, 1993) designed to measure Janis and Mann's (1977) decision making styles and self confidence. The ADMQ (Mann, Harmoni & Power, 1989) is a 30 item self-report questionnaire that asks respondents to check one of four responses to each item; "Not at all true for me" (scored 0); "Sometimes true" (scored 1); "Often true" (scored 2) and "Almost always true" (scored 3).

The scale has been used to examine the coping patterns of Israeli adolescents in comparison with Australian adolescents (Friedman & Mann, 1993) and internal reliability estimates range from .66 to .73 (Harmoni, 1990).

Information Gathering Behaviour: This data was obtained from two separate scales used as part of a larger research program on adolescent decision making (Johnson, 1994). Students were asked to rate on a scale of 1 (None) to 4 (A great deal) on how much information they had received from a number of sources about their Abilities, Interests, and Values, and, The World Outside of School. These two areas represent an emphasis in counselling and curriculum. Initial administration of this material described 26 sources of information about post-secondary options obtained from a review of the literature and interviews with Year 12 students (Johnson, 1993). After analysis of the data the sources were collapsed into 13 separate sources for further analysis.

Procedure

Permission to survey students was obtained from the respective school decision making bodies. Prior to the administration of the survey a letter was sent to every student and their guardian that informed them of the purpose and continuing nature of the survey. The survey administration was generally conducted in non-teaching classes that ranged from 30 minutes to 1 hour. The survey was generally completed in 15 to 20 minutes. In consultation with individual schools the researcher was available to help administer and answer questions about the survey. Teachers were provided with written statements concerning the administration of

the survey and the survey form contained enough information and written instructions for the majority of students to self-administer.

Results

Scale Analysis

Theoretical considerations, internal consistency estimates, and factor analysis were utilised to construct item-composite dimensions for the scales of Information Gathering Behaviour, and to examine the validity of the model suggested by Mann, Harmoni and Power (1989) for the ADMQ.

The ADMQ

The first set of analysis examined the internal reliability estimates (Cronbach, 1951) obtained in the current research with two previous studies using the ADMQ (Friedman & Mann, 1993; Harmoni, 1990) and to results obtained by Burnett, Mann and Beswick (1989) using the adult version of the scale. Harmoni (1990) studied the decisions regarding health of 556, 13 to 15 year olds in South Australian high schools. Friedman and Mann (1993) examined the coping patterns of 1,027 Israeli and 428 Australian children aged 13 to 15. Burnett et al (1989) examined the patterns of 40 Australian university undergraduates. Table One shows that the coefficient alpha's obtained in the present research was similar to those obtained by Harmoni (1990) and Burnett et al (1989). Measures of internal reliability for the first and second administration were similar.

Table 1: Comparisons of coefficient alpha's between the current research and that of Friedman & Mann (1993) and Harmoni (1990).

ScaleHarmoniFriedmanBurnettCurrent
Vigilance.73.77.73
Panic.70 between.74.77
Cop Out.66.59 to .65.74.77
Complacency.73NA.77

n5561,456 40241

Following the examination of internal reliability, analysis was undertaken on each of the subscales of the ADMQ to examine the fit between the data obtained and the theoretical model. Kurtosis and skew for each item were calculated but none were found to significantly break the assumption of normality. Each subscale was then analysed using a confirmatory factor analysis technique (Maximum Likelihood) to test the fit of the

theoretical model.

Vigilance Subscale
After examination of kurtosis and skew a one factor Maximum Likelihood (ML) model was used to determine fit. The results did not support a single factor interpretation (Chi-square = 13.80, df = 5, p = .02). The factor matrix indicated item eight and 13 were not loading greatly on the factor. A one factor ML was undertaken without these two items (Chi-square = 1.29, df = 2, p = .53). Friedman and Mann (1993) have suggested that these two items: "I take a lot of care before making my decision" and, "Once I've made my decision I don't change my mind" represent pre and post-decision behaviour.

Maladaptive Coping Subscale
A three factor ML, varimax rotation model was used to examine the relationship among the three maladaptive decision making behaviours - cop out, panic and complacency (Chi-square = 139.87, df = 102, p = .01). The three factors accounted for 51.80% of the variance. The varimax rotated factor loadings indicated that the maladaptive behaviours described by Mann et al are substantially interrelated. Of the three concepts the items assessing panic were the most uni-dimensional,

while those assessing complacency and cop out show some ambiguity.

Table 2: Rotated factor matrix for maladaptive behaviour items. Items are arranged in their theoretical subscale with the embolden numbers representing the high factor loadings.

SubscaleItemFactor 1Factor 2Factor 3
Complacency10552629
12822018
24151056
26241652
29251261
30343041

Panic11335610
15174428
18217410
191664 -05
22154935
25203242

Cop out7613016
9522918
14811329
17233020
2108 -0258
28463328

The factor loadings suggest that there are three overall concepts assessed by the ADMQ, complacency, copout and panic. Complacency and copout are highly correlated both substantively and in terms of their measurement properties. The factor loadings suggest that items 25 and 30 warrant attention ("I choose on the basis of some small thing"; "I prefer to do what others choose because I don't like to be different"). The subscales of the ADMQ are all significantly interrelated. Table Three indicates the correlations between the summed scores of the four decision making scales. As can be noted from the table, vigilant behaviour is associated with reduced degrees of maladaptive behaviours.

Table 3: Correlations between the summed scores for each of the ADMQ subscales, vigilance, complacency, panic and copout.

	Copout	Complacency	Panic	Vigilance
Copout	1.00			
Complacency	.77*	1.00		
Panic	.60*	.58*	1.00	
Vigilance	-.50*	-.57*	-.37*	1.00

Analysis of variance was also conducted to examine if males and females significantly differed in their responses to the scales of the ADMQ. Significant differences were not found.
The measurement properties for the ADMQ reported here are similar to those obtained for previous analysis of the ADMQ and DMQ (eg., Burnett et all, 1989; Harmoni, 1990).

Test-Retest Data Analysis
Data was obtained from 131 students who had completed the ADMQ on both the first and second administration. The administrations were separated by 12 weeks. The scores on the five subscales were summed as per Mann's theoretical model and a paired t-test undertaken for each subscale (see Table Five).

Table 5: Summary of paired t-test results for differences between the means of the five subscales of the ADMQ at Time 1 and Time 2.

Subscale	Correlation	pt-value	p
Vigilance	.59	.00	1.41
Panic	.62	.00	-.20
Complacency	.60	.00	-3.10
Copout	.55	.00	-2.04

As can be seen from the table, vigilance and panic were consistent over the two administrations though complacency and copout both increased between the first and second administration.

Information Gathering Behaviour

The two scales of Information Gathering Behaviour (About Abilities, Interests, and Values; About the World of Work) were analysed individually. Each scale reflects the current emphasis in curriculum and vocational counselling on the necessity for students to obtain information about themselves and the world of work.

Coefficient alpha's were determined for the 13 sources for each scale. The estimations for reliability were .84 for the Abilities scale, and .85 for the World of Work. The results did not suggest removal of any item. Similar measures of internal reliability were obtained for the second administration. Each scale was then factor analysed using a Principal Components model with varimax rotation, and a minimum eigen value of 1.0. Tables Six and Seven report the factor loadings obtained.

An analysis of the factor loadings suggested that the two scales consisted of three factors each that showed a degree of similarity: Information from Personal Experiences (eg., school or work); Information from Family and Same Age Peers; and, Information from Other Adults (eg., older peers group members, Youth Education Officers). For further analysis of information gathering behaviour six composite variables were calculated based on the sum of the ratings of source use multiplied by its' factor weighting (Abilities-Personal Experience, Abilities-Family & Peers, Abilities-Other Adult, Work-Personal Experience, Work-Family & Peers, and Work-Other Adult).

Table 6: Factor Loadings for Information About Abilities, Interests, and Values (decimal point omitted).

Factor 1Factor 2Factor 3
Source of InformationExperiences Family Other Adults

Parents1876 -05
Siblings334016
Relatives08 -1272
Older Peers175160
Same Age Peers128022
Counsellors142465
Teachers573615
School Subjects7017 -01
Books, pamphlets562528
Computer Programs73 -1111
Media6139 -01
Experienced Others583641
Work Experience 57 16 39

Table 7: Factor Loadings for Information About The World of Work.

Factor 1Factor 2Factor 3
Source of InformationExperiences Family Other Adults

Parents017200
Siblings234822
Relatives040584
Older Peers433951
Same Age Peers137217
Counsellors75 -0217
Teachers395616
School Subjects2866 -01
Books, pamphlets552429
Computer Programs6615 -25
Media535100
Experienced Others643633
Work Experience 693514

The information gathering behaviours of the students were not consistent over time. Again paired t-tests were undertaken to examine the relationship among the six composite measures of information gathering for administration one and two (Table Eight). All showed increases in the degree of information gathering by the

students. Large increases in the amount of information gathering about the self (abilities, interests, values) occurred over the period.

Table 8: Summary of paired t-test results for differences between the means of the six measures of information gathering at Time 1 and Time 2.

SubscaleCorrelation pt-value p
Abilities
Personal Exp..37.01-28.30.01
Family & Peers.37.01-29.48.01
Other Adult.27.01-29.15.01
Work

Personal Exp..33.01 -5.71.01
Family & Peers.36.01 -5.48.01
Other Adult.26.01 -8.23.01

Regression Analysis
Multiple regressions were performed with the four subscales of the ADMQ, complacency, panic, cop out and vigilance, as the independent variables (IVs), and each of the six information measures as the dependent variables for both the first and second administration. Table Nine displays the R
R

Table 9: Regression Data for Six Dependent Variables with Styles of Decision Making as the independent variables for the first and second administration.

Dependent Variable R
(First Survey)
Abilities
Personal Exp..03.011.71.15
Family & Peers.02.011.65.16
Other Adult.04.022.22.07
Work
Personal Exp..06.043.52.01vig, panic
Family & Peers.02.011.42.23
Other Adult.05.032.88.02vig

(Second Survey)
Abilities
Personal Exp..07.042.68.03complac, cop
Family & Peers.07.042.77.03complac

Other Adult.06.032.18.07
Work
Personal Exp..05.021.92.11
Family & Peers.03.011.25.29
Other Adult.06.032.31.06

(vig = vigilance; com plac= complacency; cop = copout).

For administration one and two a total of four regression analysis results significantly differed from zero. During the first administration the ADMQ significantly, though not substantively, predicted the gathering of Information About the World of Work obtained from Personal Experience (eg., school, the media, work experience) and Information About the World of Work Obtained from Other Adults (eg., Relatives, Older Peer Group Members). Only two of the IVs contributed significantly to the prediction of Information Gathering About Work from Personal Experiences, vigilance ($T = 2.82$, $p = .01$) and panic ($T = 2.16$, $p = .03$), though only 6% (4% adjusted) of the variability in such information gathering behaviour is predicted by knowing the scores. For information obtained from other adults only one IV, vigilance, was significant ($T = 2.60$, $p = .01$) with 5% of the variability predicted by the combination of IV scores. Examination of the correlations between the styles of decision making and the six measures of information gathering indicated that only vigilance correlated with any of the information measures ($r = .14$ for Abilities-Other Adult, $p < .05$; $r = .19$ for Work-Personal Experiences, $p < .05$; $r = .16$ for Work-Other Adult, $p < .05$).
At the second administration, the ADMQ significantly predicted the gathering of information about abilities obtained from personal experiences and family and peers. Unlike the first administration, complacency and copout were the major predictors of the information gathering behaviour. As with the results of the analysis of the first administration, there was little variability in information gathering predicted by the students self-reported decision making styles.

Analysis of the regression matrices for the relationships between the Decision Making Styles and Information Gathering Behaviour revealed that the variability in the scores of Decision Styles was not great. Consequently, while no overall predictive

ability may be noticeable it is possible that different groups of individuals may have significantly different information gathering behaviours. To examine this issue the predictive ability of the ADMQ was examined for males and females and for those with different levels of vigilant behaviour.

Gender and Decision Style

The question that asked is in what ways do males and females differ in the relationship between the linear combination of decision making styles and the measures of information gathering. To analyse the relationship between the ADMQ and the measures of information gathering, separate multiple regressions for males and females were undertaken.

Unlike the overall analysis previously reported the ADMQ did not significantly predict the gathering of any information by males. All multiple regressions for the male group were non significant. However, as Table 10 indicates, for females the ADMQ was a significant predictor for all the information scales at the first administration and three of the variables on the second.

Table 10: Results of significant multiple regression analyse for females on the predictive nature of the ADMQ on information gathering behaviour, with significant IVs listed.

Dependent Variable R
(First Survey)
Abilities
Personal Exp..11.073.45.01vig, com, cop
Family & Peers.10.073.31.01vig, com
Other Adult.10.073.27.01vig
Work
Personal Exp..12.094.07.01vig
Family & Peers.10.073.13.02vig, cop
Other Adult.11.083.51.01vig

(Second Survey)
Abilities
Personal Exp..12.072.64.04com, cop
Family & Peers.13.082.78.03com
Other Adult.12.082.72.04vig, com

(vig = vigilance; com = complacency; cop = copout).
For data obtained during the first administration

vigilant behaviour was a significant predictor of information gathering in all cases and was a significant predictor of females the use of Other Adults in the second administration. Complacent behaviour was a significant predictor of information gathering about abilities, interests and values from personal experiences and family and peers in both the first and second administration. For both administrations copout behaviour was a significant predictor of information gathering about abilities from personal experiences. It was also a significant predictor of information gathering about work from family and peers for the first administration.

Differences in vigilant decision making styles

The data obtained was examined for variations in the information gathering behaviour of individuals who were higher or lower in vigilant decision making. The description of vigilant behaviour is one of exploring alternatives, objectively weighs costs and benefits, and would incorporate more of the seven procedural criteria for high quality decisions presented by Janis and Mann (1977). Consequently it suggests that such individuals should engage in more detailed information gathering behaviour. In order to examine the issue individuals who represented vigilant scores that were one standard deviation above and below the mean. This provided two groups consisting of 14 and 16 individuals respectively.

Analysis of variance examined whether vigilance grouping influenced the information obtained based on the six information sources and types identified earlier. The results indicated there was no significant difference between the two vigilance groups on their collection of information about the world of work. None of the univariate statistics were significant.

The results for the analysis for information about abilities, interests, or values indicated two significant differences. Information about abilities, interests, and values obtained from Family and from Personal Experiences significantly differed for the two vigilant groups ($F = 5.36$, $p = .03$; $F = 4.94$, $p = .02$ respectively). Table 11 provides the means and standard deviations for these two scales.

Table 11: Means and Standard Deviations of Information about Abilities, Interests, and Values obtained from Family and Personal Experiences for individuals rated

one standard deviation above or below the mean for vigilance.

FamilyPersonal
GroupMeanStd DevMeanStd DevN
-1 sd 3418372214
+1 sd2114211516

The table indicates that individuals one standard deviation below the mean on vigilance engaged in more information gathering about their Abilities, Interests, and Values from sources that encompassed personal experiences (eg, through school) and family and same aged peers.

Discussion

The results of this study offer partial support for the influence of decision making styles on the information gathering behaviour of final year students. Overall, the decision making styles described by Janis and Mann (1977) and assessed through the ADMQ are not 'good' predictors of the information gathering behaviour of Year 12 students. While some of the relationships between the measures of information gathering and the ADMQ were statistically significant, substantively they predicted little of the information gathering behaviour.

There was some indication that vigilant behaviour is associated with obtaining information from informed sources (eg., older peer group members or counsellors) about the world of work. This makes substantive sense if one considers that vigilant behaviour is a more active decision making style. It is probable that individuals who are vigilant decision makers are more likely to access 'expert' sources of information. This is similar to findings of other researchers (eg., Blustein & Phillips, 1988; Hesketh, 1982).

Less vigilant individuals were more likely to engage in information gathering about their abilities and interests from family and personal experiences than more vigilant individuals. On the surface this appears contradictory. However, Blustein's model of career exploration offers a rationale in that it suggests that the early phases of the decision making process consists of gathering information about the self (Blustein, 1982). It is also noteworthy that complacent behaviour predicted information seeking about abilities from family and personal experiences. It is highly

probable that by year 12 the more vigilant decision maker has already established their choice. Indeed there is research to suggest that Year 11 students are more active seekers of information about vocational options than other year groups (Bergland & Krumboltz, 1969).

It is also probable that factors such as accessibility and preference for particular resources may be more significant predictors of information gathering behaviour (eg., O'Reilly, 1982). The relationship between complacency and the use of information resources that appear to be more accessible (eg., parent and peers) supports this view. It may be that more complacent individuals, reflecting a more dependent style of decision making, are only just beginning their exploration of alternatives and are relying on those resources that are easily accessible. This supports that theoretical model proposed by Janis and Mann (1977) though the results while significant are not substantial.

The substantial increase in information gathering about interests and abilities between the two administrations suggests that many individuals are just beginning to engage in information gathering. These factors tied in with the increase in complacent and copout self ratings suggest that few students actively engage in decision making and feel powerless or dependent on others for their decisions.

The influence of gender on the information gathering behaviour was both significant and modestly substantial. That males did not show any relationship between their decision style and information gathering behaviour at any stage, suggests that they may be either too confident about their choices or over-reporting their decision 'skills'. As there were no significant differences between males and females in their reported use of information sources, it appears that males are using the resources but perhaps in a non-systematic way. The result indicating that vigilance was a significant predictor of female information gathering at the first administration suggests that females are more concerned about their decision than their male counterparts. This may reflect a greater degree of decision maturity in the vocational field. Perhaps males see little necessity to engage in systematic career exploration at this stage of their education, or are less certain of their career choices? Indeed research does suggest that females are more

specific in their vocational choices by Year 12 (Jepsen, 1975).

On the surface it appears from these results that decision styles have little to offer the counsellor or researcher. What it does indicate is the dependent decision making 'style' of many students. There appears to be a requirement to analyse the information we as counsellors and educators are providing and accept the idiosyncratic nature of information gathering. More information is not necessarily better as most students appear to be relying on accessible sources of information rather than appropriate sources.

The body of research indicating that decision styles are important indicators of information gathering at other transition points (eg., Blustein & Phillips, 1988; Hesketh, 1982) suggests that students, while having decision making skills, are not making 'good' decisions about their post-secondary options. This has a number of implications. It suggests that constraints within the occupational and social world of the adolescent may limit their use of appropriate decision making strategies. As such there is a need to establish decision making programs within the education system. It is not enough to provide information. Year 12 may be too late to be providing information for decisions, or even decision skills. Government statements about the necessity for students to leave school with the capacity to make decisions (eg., NBEET, 1994) requires a realisation that students do have such capacity but that the system constrains them. Perhaps there is a requirement for individuals to be 'stressed' earlier in their schooling about their post-high school pathways. Janis and Mann's model suggests that it is only when individuals faced with psychological stresses engage in decision making. The question that educators and counsellors must ask themselves is should we 'stress' the individuals in order for them 'see' the necessity for decision making.

The education and counselling system could 'de-stress' the final year as a major period of transition. The increasing movement of students into higher education (university of TAFE) and apparent moratorium in decision making this may reflect suggest to this author

that we provide our students with a view of the world that de-emphasises the school to work transition. That individuals in the workforce are more transient in their careers and liable to engage in education and training throughout their working life, suggests that

we may be able to provide our Year 12's with time enough to mature as a decision maker rather than push them into a stress filled decision that many appear to see as an 'all or nothing' transition point. Year 12 is a stressful decision point for historical and social reasons, yet the reality of multiple pathways and rapid changes in vocational goals suggests that it is possible to de-stress Year 12. Failing this it is up to the counsellor and educator to reinforce the notion of individual psychological differences in vocational decision making. Differences in the self may be overwhelmed by social and occupational influences on decision making (eg., parental support) but is, nonetheless, an important consideration for the individual.

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