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DECISION STYLE, ABILITY AND THE EFFECTIVENESS  
OF A CAREERS INTERVENTION.

A thesis presented in partial fulfilment of  
the requirements for the degree of  
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at Massey University.

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## ABSTRACT

This study aimed to evaluate the impact of a career decision-making exercise on decision-making skills in groups with different academic ability and career decision style. The study was conducted in a single sex female school using four classes (90 students in total) of Fourth Formers. Three separate phases were carried out within a two week period as part of the careers program. Phase one involved pretesting students using measures of knowledge of sources of careers information and actions to be used when making a careers decision. Career decision style, logical reasoning and demographic details were also obtained at this stage. During phase two students were either taught a specific decision-making exercise (Experimental intervention) or an exercise on women in the workforce (Placebo intervention). The final phase involved a post test and follow up career exercises. Results were analysed using  $2 \times 2 \times 2 \times 2$  (type of intervention, career decision style, academic ability and pre/post test) way ANOVAs for each dependent measure. The group exposed to the career decision-making exercise did not show the predicted improved performance over those exposed to the placebo intervention. Gains were evident in the knowledge of career information sources but this was the same for both interventions. Academic ability and career decision style did influence the intervention outcomes but not in the predicted directions. Results are discussed in terms of the adequacy of the measures of career decision-making skills and the unexpected impact of the placebo activity. The importance of taking into account decision style and academic ability in designing careers interventions is high-lighted.

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## CHAPTER ONE - INTRODUCTION

### 1.1 Psychological Decision Theory

Decision making involves the selection of a course of action from a number of available alternatives and may be considered from both psychological and economic viewpoints. Economic theorists since Jeremy Bentham (1748-1832) have attempted to predict consumers choices along with a variety of other investment related decisions.

Jepsen and Dilley (1974) suggested that a decision-making conceptual framework assumes the presence of a decision maker, who uses information from both the person and from the environment, within a decision situation. The decision maker considers two or more alternative actions, assesses their outcomes in terms of the probability of their occurrence and their value and finally makes a commitment to a single choice. While all decision theory is based on these elements, emphasis tends to vary according to the type of decision being considered.

Edwards (1954, 1961) in an early examination of decision making, concluded that economic theorists tended to focus on the idea of the subjective value or utility of the alternatives under consideration. The decision maker was also assumed to behave rationally showing a weakly ordered preference for the alternatives. This transitivity of preference (i.e. if A is preferred to B, B is preferred to C it should follow that A is preferred to C) however, has not always been demonstrated in later studies (Edwards 1961), and emphasis is shifting to stochastic models which explore dynamic change in both the environment and decision maker (Thoresen and Mehrens, 1967). Thus models such as Edwards (1954, 1961) assume choice will be made by maximising the expected utility, and mathematical formulae may be used to calculate this.

In an application of decision theory based on an assumption of rationality Vroom (1961) proposed the concepts of Valence, Expectancy and Force in two related cognitive decision models. The first, the valence model, suggests that the value of an outcome depends on the anticipated satisfaction to be gained from it and whether this outcome will lead to other desired outcomes, (instrumentality). This valence model is frequently used to predict occupational preference (Mitchell & Beach, 1976).

The second aspect suggested by Vroom is known as a Choice model, and predicts the force to perform a behaviour. The focus of the Choice, model is an expectancy, defined as the belief the individual has that the behaviour being examined will be followed by the desired outcome. This expectancy is an action - outcome association, whereas instrumentality is an outcome - outcome association. Thus force, a product of valence and expectancy, controls which alternatives the decision maker chooses in order to maximise his or her gains. The force model has been related to occupational choice.

In examining the results of studies using Vroom's model, Mitchell and Beach (1976) concluded that there was substantial support for the expectancy model. Studies (Holmstrom and Beach, 1973 and Muchinsky and Fitch, 1975) have correlated subjective expected utilities with students' occupational preference ratings and obtained values of 0.83 and 0.84 (mean correlations).

Huber, Daneshgar and Ford (1971) explored the use of a weighted expected utility model (probabilities replaced by an index of importance of the outcome to the decision maker) to predict which job teachers would accept if offered a choice of placements. The model allowed 60% correct prediction of the job chosen. Such models can therefore provide an explicit way in which information, values and future

expectations are evaluated and combined to enable the individual to arrive at a personal 'best' choice.

Other studies dispute the idea of maximising gains fundamental to probability-utility theories. Simon (1959) suggested that not all decision making is achieved using a planned rational course of action. Due to man's limited ability Simon suggests the decision maker tends to construct simplified models of reality in order to deal with complex situations. This leads to the choice of the first satisfactory alternative with no further consideration of alternatives. This idea of 'satisficing' also suggests a lowering of goals, when much searching fails to reveal a suitable choice.

Soelberg (1967) refined this idea further and proposed that in order to simplify the decision process the individual uses a 'favourite' alternative as a standard against which to assess other alternatives. Such a 'validator' searches through all the alternatives only until two suitable ones are defined. A final choice is then made using these alternatives without considering other alternatives. Research (Gluek, 1974) supports these differing search strategies and suggests "maximisers" use the most rational and "Satisficers" the least rational strategies, still within a utility-probability framework.

Most of the above models fail to incorporate external influences on the decision maker. One that does can be seen in the work of Fishbein and Ajzen (1975, 1980) who provide a model that can be applied specifically to vocational decision-making. In 1967 Fishbein proposed a 'theory of reasoned action' in order to predict and understand an individual's behaviour, with the focus on the intention to perform as being the determinant of the action following.

This determinant has two component parts. The first is the individuals' attitude toward the behaviour and the second is the persons perception of the social pressure upon him or her to behave in such a way. This latter 'subjective norm' is the element not included in the decision theories previously mentioned. These two elements, attitude toward the act and subjective norm, are weighted relative to each other and according to the intention under consideration. It should be noted that the attitude is toward an intended behaviour rather than an object or target.

Ajzen and Fishbein (1980) also emphasise that their theory identifies a small set of psychological concepts which help to account for relationships between external variables such as age, sex, social class and race, and any kind of volitionally controlled behaviours. The idea of incorporating the influence of 'others' with the individual's actions, expectancies and probability of outcome, provides a broader framework within which to consider decision making in vocational choice.

In an effort to test the model Sperber (in Ajzen and Fishbein, 1980) empirically studied teenage girls intentions to choose between a career lifestyle and a homemaking lifestyle. The result of this study showed the decision to be primarily based on judgements regarding the arguments for and against the alternative lifestyles, that is their attitude towards the behaviours of career-making or homemaking. The influence of social pressure on the intention to chose depended on the consensus of the pressure. When significant others all clearly favoured an alternative this was usually the one chosen. If social pressure was conflicting this 'subjective norm' had a weak influence on the final choice intention.

This study highlights the potential influence of others, such as parents and school guidance counsellors on the choice of career. These influences must be examined when considering styles of career decision making.

This section has discussed general decision theories with an emphasis on those such as Vroom (1964) and Fishbein and Ajzen (1975, 1980) which can be applied to occupational decision-making.

A discussion of decision theories specifically designed to apply to career decision-making follows.

## 1.2 Decision Theory Specific to Vocational Choice

The process of preparing for education and work throughout life is called vocational development. Within such development it is assumed many decisions will be made by the individual in pursuit of short and long term vocational goals. General psychological decision theory and theories of vocational development have influenced the emergence of vocational decision models. Sime and White (1976) suggest such models may be classified into, those which are prescriptive of behaviour, such as normative probability - utility theory, and those which are descriptive of the vocational decision process.

Many prescriptive models of career decision-making have been proposed. Katz (1966) suggests a practical method of aiding career decision makers to explore and examine their own values. This approach does not help the decision maker list many alternative action plans. Instead a few options are studied in depth. The decision-maker's values are related to options and the values are then weighted in terms of importance. For each option the sum of the relevant values weighted by importance is then multiplied by the probability of the decision maker's success and an expected value calculated. The recommended option is that for which the expected value is highest. While this model is prescriptive of the action necessary at the point of a career decision, it does not consider the full decision process.

A conceptual model which does focus on the process of decision making was developed by Gelatt (1962). The model assumes that guidance in decision-making should aim for the use of 'good' decision strategies, as well as successful outcomes. Information is the focal point and is considered to fall into three systems. The Predictive system looks at alternative actions and the probabilities of particular outcomes. The relative preference for outcomes is considered

under the Value system and the rules for choosing fall into the Criterion system. Gelatt (1962) suggests that with adequate information in each system, optimum conditions exist for successful decision-making. However no specific rules are given for the process of linking the three systems into a decision strategy. This model implies that the improvement of information sources and the use of the information gained will lead to better decisions (Clarke et al 1965), without specifying the way in which the information should be utilised. It therefore provides a prescriptive model for information search but not for information integration.

Kaldor and Zytowski (1969) also derive their career decision model from economic probability theory. They suggest that a career choice is determined by the strength of the decision-makers preference, the quality of the inputs (information resources) and the consequences that are anticipated for each alternative output. The individual is assumed to be aiming for the greatest gain, when balancing input costs against output gains. Alternatives are discarded when their net value is not as positive as expected and the career decision-maker maximises the net gain among the remaining alternatives. This view is supported by Katz (1966) and Hershenson and Roth (1966).

These models assume that the decision-maker uses rational strategies and has access to unlimited information (Jepsen and Dilley 1974). Descriptive vocational decision models however do not make such assumptions as they try to describe the decision process that people 'naturally' follow. There are fewer theories which fit this category. Although Hiltons (1962) model, based on complex information processing mechanisms does fit, only Tiedeman and O'Hara's (1963) model of stages will be enlarged on here. This latter model is chosen as it can incorporate decision-making style, a variable of key importance in the present study.



Tiedeman (1961) and Tiedeman and O'Hara (1963) presented a paradigm in which career development was seen to consist of linked decisions, each of which was approached using a set of ordered stages. These stages were categorised into a period of anticipation or clarification of the decision problem, and a time of implementation and adjustment which occurred after the moment of choice. Although stages are treated as discrete, changes between stages are actually gradual. This means that one stage tends to dominate, but advance and retreat between stages is possible.

Within the anticipation period (from problem definition to moment of choice) there are four conceptual stages. In Exploration the decision-maker defines the vocational problem, creates goals and imaginatively explores the fields surrounding them. Crystallization, the next stage, is when goals are ordered, according to their value to the decision-maker, although further 'exploration' still occurs. At the stage of Choice a decision is made following whatever strategies the decision-maker uses to choose between career alternatives. These strategies may vary on a continuum from emotive to rational. Finally Specification provides an inactive period for the consolidation of information surrounding the choice, and a time for dissipating doubts as to its 'correctness' for the individual.

The second period is that of implementation and involves a further three stages. Induction is when the decision-maker faces the reality of the choice as he or she begins to implement it, and this is closely followed by a time of Transition when adjustment to the outcomes engender confidence in the decision. The final stage is that of Maintenance, a condition of dynamic equilibrium, when the decision-maker adapts to any influences impinging on his or her decision.

Overall the Tiedeman-O'Hara paradigm considers both the steps leading up to and following the choice point. Research into the theory has tended to concentrate on the Anticipation period and while it is generally supportive (Jepsen and Grave 1981) the theory needs to be stated more explicitly and measures operationally defined. As a theory of decision-making it has advantages in that its descriptive nature allows it to incorporate external variables that influence career decision-making. It also does not assume rational decision-making strategies or limitless information sources, as do, some of the models already mentioned. Thus the influence of the decision-makers career decision style (i.e. rational or non rational) on organising career and personal information can be examined as a factor in making effective career decisions.

Recently Krumboltz, Mitchell and Jones (1978) presented a model relating social learning theory to career decision making. Krumboltz et al (1978) consider the influence of a combination of factors such as genetic endowment, performance skills, environmental conditions, cognitive and emotional responses and learning experiences on the individual in making a career choice. The model is descriptive, treating career selection as a life long process with numerous decision points linked by period of personal growth and influenced by the factors mentioned above. It could provide a broad conceptual framework incorporating the other types of vocational decision models at the decision points.

None of the vocational decision models discussed above offer a complete framework for career decision-making. The models tend to complement one another and there is a need for a more comprehensive 'working' framework to provide guidance for career decision-making. In an attempt to provide such a 'working' framework elements of some of the models mentioned (Gelatt, 1962, Kaldor and Zytowski 1969, Tiedeman, 1961 and Krumboltz et al, 1978) will be combined for this study.

The focal idea of decision style will therefore be examined within a 'working' career decision-making structure.

### 1.3 Decision Style

A common assumption in the theories concerning vocational decision-making is that the behaviour necessary to achieve success must include logical-rational thought and explicit rule following (Baumgardner 1976, Hesketh 1982, Pitz & Harren 1980). This suggests one type of decision style. However in a study classifying career decision behaviour, Arroba (1977) isolated six styles of decision-making.

'Style' can be viewed as descriptive of the decision-maker generally or of the behaviour specific to a particular decision. Arroba chose to define style as descriptive of specific behaviour in a particular decision situation. The decision-maker was viewed as having a repertoire of behavioural styles available for use in different situations. The six styles indentified in Arroba's(1977) study were:

- 1, Logical
- 2, No thought
- 3, Hesitant
- 4, Emotional
- 5, Complaint
- 6, Intuitive.

The study found that the style used varied according to the amount of control the decision-maker had and the importance of the decision. For example when making a voluntary career choice which the decision-maker classifies as very important a Logical decision style is favoured.

Other researchers have examined some facets of decision style in relation to vocational choice. Using Arroba's six categories in a longitudinal study, Hesketh (1982) considered the active-passive dimension of style in relation to the outcome of choice. The results suggested that an active logical decision style was related to the later effective implementation of plans. However Hesketh (1982) stresses that the study did not adequately control for

ability in Maths and Sciences, which was also related to successful implementation of plans. Future research needs to examine the relationship between style and outcomes, controlling for ability. In the present study ability was controlled when examining the impact of style on outcomes.

Baumgardner (1976) viewed decision style as falling on a continuum from an analytic/rational style to an intuitive/reflective style. The 'hard' academic areas (such as the natural sciences and engineering) facilitated the analytical mode and the 'soft' academic studies (such as humanities and social sciences) the intuitive mode. Studies by Baumgardner (1976) of college students found that those with high intuitive scores changed majors more often than analytical students.

When examining vocational decision-making strategies used by adolescents, Jepsen (1974) found 12 different styles being used, which appeared to relate to the stages in a vocational decision model such as that of Tiedeman and O'Hara (1963). There was a development of style from an intuitive style in exploratory stages towards rational styles for the implementation of a decision.

Armstrong (1981) examined the effect of career decision style used by adults returning to school, on the success of a change in career direction. Two distinct career decision styles were isolated. When the decision-maker based their 'school return' decision on both limited alternative choices and little accompanying information, the style was called incremental as further information could modify it. The second, rational style, utilized a broad base of both information and alternatives. The main impetus was to select an 'optimal alternative' to affect 'irreversible major career change'. (Armstrong, 1981, p.206). In the same study it was found that if a rational decision style was used for such career change, returning to school was a successful way to implement the decision.

In an attempt to relate decision style to the process of career decision choice, Harren (1979) incorporated it into his career decision-making model for college students, which will now be explored.

Harren (1966) chose the first four stages of Tiedeman and O'Hara's vocational decision-making paradigm as a basis from which to examine vocational choice as a process within college students. In 1979, Harren extended the Tiedeman and O'Hara model to incorporate external and internal influences into the process of career decision making by college students.

Harren's (1979) model suggests four interrelated parameters; Process, Characteristics, Tasks and Conditions. The Process parameter covers the process of the career decision choice from the awareness stage through to the implementation of the final choice. Characteristics include self concept and career decision style. Within Tasks parameter are given the tasks of autonomy, interpersonal maturity and sense of purpose which are all appropriate to late adolescence. The final parameter covers Conditions such as interpersonal evaluations (positive and negative feedback from others), Psychological states (e.g. anxiety levels), Task conditions (i.e. immanence of decision, alternative choices and consequences for choice) and Context conditions (role of significant others relative to the decision). For the purposes of this study only that part of the 'Characteristics' aspect of the model, that relates directly to hypotheses to be examined, will be considered in depth.

Two major individual characteristics are postulated to affect the career decision process. The first, self concept, refers to the individuals attitudes or traits implicated in a vocational decision. This self concept has an evaluative element called self esteem and a differential/integral element, identity. A highly differentiated self concept means the individual has a strong sense of 'who one is' and experiences satisfaction with this self knowledge. The second decision-maker characteristic is decision-making style. Harren (1979) defines this as the manner in which the individual interprets and responds to decision-making tasks.

To arrive at definitions for variations of style Harren adapted a classification developed by Drinklage (1969) to assess the styles students used in educational, vocational and personal decision-making.

Originally Drinklage (1969) proposed eight styles; planning, intuitive, compliant, fatalistic, impulsive, delaying, agonizing and paralytic. Only planning and intuitive styles were found to lead to effective career decisions (Miller and Tiedeman, 1972). Different styles were used by males and females. Style also varied according to the type of school attended and the context of the decision (i.e. educational, vocational or personal). (Drinklage, 1969).

Harren (1975) collapsed these eight styles into three categories based upon the degree of personal responsibility the decision-maker assumes for choice outcomes, and the degree of rational (as opposed to emotional) strategies employed in the decision process. The three styles were labelled: Rational, Intuitive and Dependent. These styles can be related to Arriba's (1977) six styles which also fell on similar dimensions.

The Rational career decision style was originally known as a planning style. The decision-maker using this style accepts the consequences of decisions which are viewed as links in a chain of choices extending forward in time. Information about self and the situational elements of the decision is gathered and reviewed through a logical sequence before a decision is reached. The effectiveness of the decision is dependent on the degree of realism of the information obtained. A rational style is seen as the ideal for the decision maker as it provides them with perceived control of their future.



As with a rational career decision style the Intuitive decision maker also accepts responsibility for actions and/or decisional outcomes but does not use logical, information seeking and ordering behaviour. The intuitive decision-maker uses fantasy and an awareness of emotional feelings as a basis for a rapid choice between alternative actions. The individual may not be able to say why a particular course of action was chosen, aside from saying that it 'felt right!'. Due to variations in emotional states and the difficulties of accurately representing the unfamiliar in personal fantasy, this style may not always lead to effective decision-making.

In contrast to the above styles Dependent career decision makers deny personal responsibility for their decisions and project responsibility away from themselves. Those using this style are influenced by the desires and expectations of others and they tend to be passive and compliant with high social approval needs. Using this style, the dependent career decision-maker can reduce immediate decision-making anxiety but does not gain the personal satisfaction typically expressed by rational and intuitive decision-makers.

As the assumption of Harren's (1979) career decision model is that progress through the stages of the decision-making process depends on the characteristics of the decision-maker, the type of decision involved and the decision-making context, it can be seen that style will be relevant at all stages of each career decision. Each decision-maker approaches career choices differently according to his or her style, and interventions by counsellors may need to take into account individual differences in preference for style.

Research is continuing into the effects career decision style has on career choice and extensive use is being made of Harren's (1980) measure of career decision style - the Assessment of Career Decision Making (A.C.D.M.). In reviewing the literature using Harrens A.C.D.M. attention will focus on



those studies relevant to present research. As decision style may influence or be influenced by external aspects, such as academic ability and socio-economic status a framework incorporating these elements will be proposed, but a comprehensive and integrated test of the proposed model is beyond the scope of this thesis.

#### 1.4 Career Decision Style and Other Influences on Career Decision-Making

Harrens early work on the ACDM supported Drinklage (1969) who found gender related differences in the use of decision style. However, recent research (Lunneborg, 1976, Harren et al 1978, Moreland et al 1979 and Harren et al 1979) examining gender differences in career decision style revealed no detectable favouring of one style by either sex. Lunneborg (1976) found no difference between the sexes in three studies using highschool juniors, on either career decision style or the career stages given in Tiedeman and O'Hara's (1963) paradigm. This result throws into doubt the need for differential career counselling for the sexes.

Harren et al (1978) went a step further and examined the effect of sex role attitudes and career decision-making style on the decision process. Their results supported the following casual inferences: gender influences sex role attitudes; sex role attitudes in conjunction with career decision styles influence the decision-making process; and these influence the decision-makers satisfaction with the choice of major. As they also found those students with a rational career decision-making style more effective in making career choices, this study suggests that the assessment of style used and the development of a rational style, as being important in counselling for career decision-making.

Moreland et al (1979) found that while gender alone was unimportant, there was a direct effect of the sex role concept on students' progress towards choosing college majors and career choice. This sex role self concept also had a direct relationship to the use of a rational career decision style for men and to both intuitive and rational career decision styles for women. While these results tend to favour differential counselling, based on an estimate of sex role self concept, it should be noted that this variable only accounted for between 2% and 16% of total variance.

The above studies suggest indirect gender influences on the decision style used. In the present study only females were used to control for possible gender effects.

The relationship of career decision-making to academic achievement, vocational maturity, and external social variables has been researched by Phillips and Strohmer (1982, 1983). Findings suggest that college students who score highly on a measure of vocational maturity, are successful academically, and use either a rational or intuitive career decision style (Phillips and Strohmer 1982). However Phillips and Strohmer (1983) in a survey of disabled and disadvantaged college students found that academic level, decision style, childhood experiences and disability had very little relationship to the level of vocational maturity attained.

In another study using Harrens ACDM, Berger-Gross (1983) included a measure of non specific anxiety which was shown to inhibit effective career decision-making. It was suggested that anxiety increases as a result of thinking about career planning. Less anxious students were found to use rational style more often and to express more commitment to an occupation, suggesting a relationship between state anxiety and a students success in career planning. The question does arise as to whether decision style contributes to state anxiety or vice versa. It may also be that anxiety acts indirectly on the career decision process with career decision style mediating this influence.

Finally in a study by Jepsen and Prediger (1981) the ACDM was one of seven measures used to assess adolescent career development. In the study four orthogonal factors were identified and labelled: Cognitive resources for decision making; decision making style; systematic involvement in career decision-making and decision-making stage or certainty.

Correlations between ACDM style categories and all other factors were low and the authors suggest style is an independent part of career decision-making.

The use of a rational decision style implies an ability to plan and reason in the logical manner suggested by Piaget (1972) when describing the formal operations stage of reasoning. It has been suggested that there is little consistency in the age when this occurs and some adults may not ever reach such a level (McKinney et al. 1977). Studies have been carried out, mainly with college students (Schwebel 1975), which suggest that by late adolescence over 50% are able to reason with some formal operational logic. Thus students of 14 - 15 years could be expected to formulate a hypothesis from what is possible and deduce the consequences that it implies in a way that is independent of the intrinsic falseness or truth of its premises (Flavell 1977). This formal reasoning process (Piaget 1972) can be seen as an integral part of successful career decision-making particularly as implied by stepwise career development theories (Tiedeman and O'Hara 1963).

It has been suggested that the growth of such formal logic, with independence from the reality content of an argument, is partially dependent on the socialisation of the adolescent. (Piaget 1972). As Schwebel (1975) found a low relationship between logical reasoning and academic criterion for women in late adolescent some measure of the level of formal operations for the subjects in this research was appropriate, to provide a check on the stage of cognitive development reached.

Besides academic ability and formal reasoning stage, socio-economic status (SES) has been suggested as affecting career decision-making (Gottfredson, 1981). Some studies correlate academic achievement with SES (Lawrence and Brown 1976 MacKay and Miller, 1982 and White, 1982) in the field of career choice. In order to consider the effect of the family on forming a career-decision style, socio-economic status for each subject was included.

From the reported research using the A.C.D.M. as a measure of career decision style it is evident that work in the area is increasing slowly. Studies by Harren (1978), Moreland et al (1979) and Phillips and Strohmer (1982, 1983) suggest that career decision-making style combines with other factors to influence the career decision-making process. In the current study which considers the influence of decision style on the effectiveness of a career decision-making exercise, within the secondary school setting, other influences (academic achievement and the family circumstances) are also considered.

As no existing career decision model incorporated these factors into one unit, a vocational decision framework that combined elements of other models (Katz 1966; Gelatt 1962, Krumboltz et al 1978) was formulated. Figure 1 shows the framework. It is not intended to cover all possible influences affecting the career decision process, but rather highlight the interaction between some major factors.

# VOCATIONAL DECISION MODEL

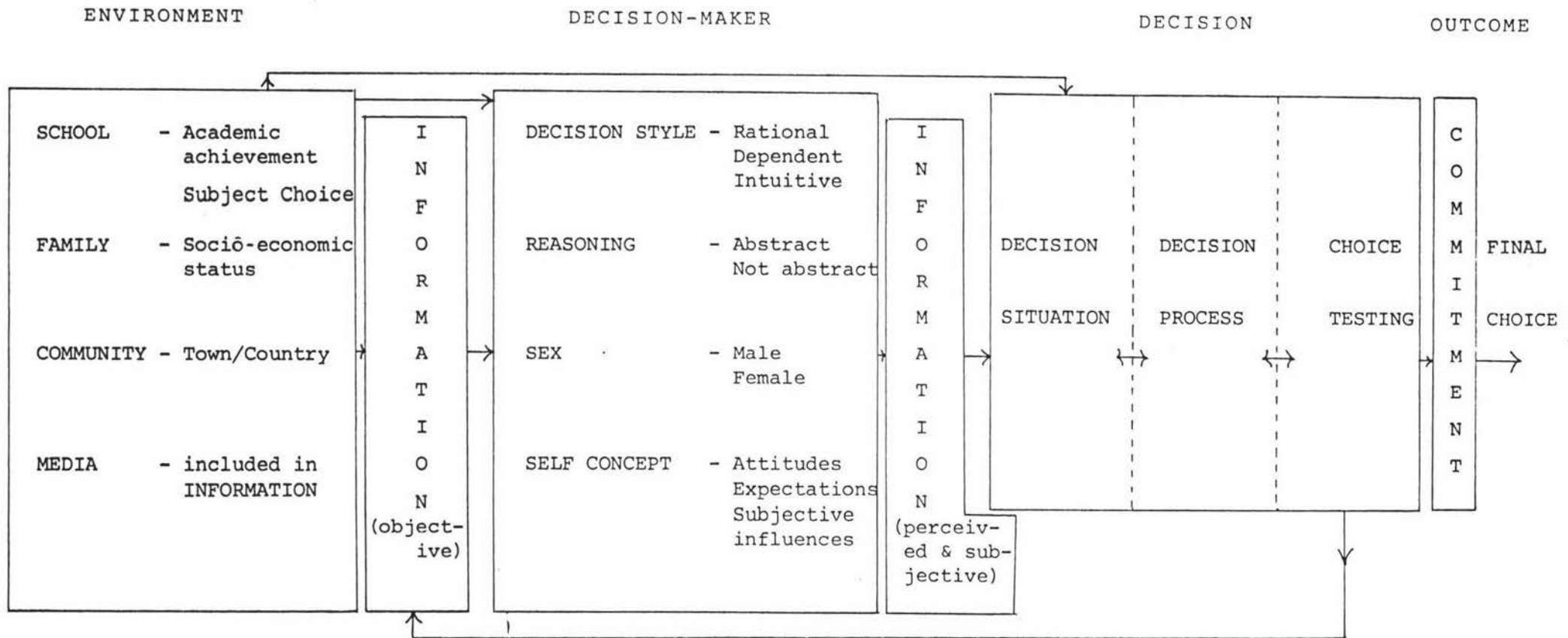


Fig. 1: A model for the vocational decision-making process with linking arrows to show the directional flow of the process.

The framework has four elements - the environment, the decision-maker, the decision and the outcome. Within each element a number of facets are high-lighted.

The Environmental influences (suggested by Social Learning Theory as it relates to career choice (Krumboltz et al 1978)) include, the school (represented by school subject choice and academic achievement), the family (for this study taken as Socio-economic status), and the community (resident in a town or country environment).

A factor stemming from the emphasis Gelatt (1962) places on information, which acts rather like a filter, is the objective information necessary for the decision-maker to make an informed decision. This information may be gained directly from the media (written and visual material) or, indirectly from life experiences in the family, in interaction with the local community. As a factor in the decision process it is therefore placed between the elements of the environment and the decision-maker as it impinges on both.

The element of the decision-maker has many facets. While four are included here only three will be used in this study. Decision style (Harren 1980), as already described in a previous chapter, has three categories - from Rational, through Intuitive to Dependent. The reasoning facet may be classified as abstract or not abstract (Piaget, 1972). Both feminine and masculine aspects are given (this study controlled for differences by using only female subjects). Finally self concept which is based on both Harrens (1979) definition and Ajzen and Fishbeins (1975, 1980) model of reasoned action, is seen to include attitudes, expectations and subjective influences. Self concept will not be examined further in this study.

Before the decision process can occur the decision-maker integrates all the information obtained which is influenced by both internal and external factors. Thus the information carried into the decision element is what the decision-maker perceives. In other words the information is personalised and becomes subjective rather than objective. This can be seen as another filter prior to the decision-making process.

The final two elements of the framework were evolved from the models of Gelatt (1962), Katz (1966) and Kaldor and Zytowski (1969) and cover the decision process. The Decision incorporates the decision situation, the decision process (that is strategies for using information to create alternative action plans) and choice testing (where outcomes are examined and weighted according to their probability of occurrence and value to the decision-maker).

The last element, Outcome, involves commitment by the decider to one course of action which will lead to implementation of the final vocational choice.

The arrows on the model indicate the direction of the decision process and the loop between Decision and Information (objective) emphasises the repetitive nature of the testing of alternative courses of action before a commitment is made to a single career plan.

The main focus of this study, career decision style, can be viewed, using the above framework, in relation to both the external influences (Environment), internal criteria (Decision-maker), the decision process (in this case an exercise to improve decision skills) and the outcome (an increase in the knowledge of information sources and actions used in career decision-making).



### 1.5 Vocational Interventions

Vocational counselling traditionally involves a counsellor and a client. Careers interventions need not be restricted to this format and there are many alternative treatments. The computer can be used as an information source or interactive 'counsellor', and vocational exercises may be explored in groups. For the purpose of this study research on group vocational interventions, especially those relating to the career decision-making process will be examined.

Such interventions commonly occur in schools and colleges as a career education programme. This career education does however differ between countries. In Britain the focus is on the point of actual career decision, while in the United States teaching of a broader career curriculum over a longer time span within different class subjects is the norm (Watts and Harr, 1976). Evaluations of such schools career guidance programmes and specific vocational interventions often lack adequate experimental control and accurate criterion measures (Watts and Kid, 1978 and Pickering and Vacc, 1984), and the results of such evaluations require careful interpretation.

From the research Holland, Magoon and Spokane (1981) found four treatment factors that underly effective vocational interventions. These are (i) exposure to occupational information (ii) cognitive review of career alternatives, (iii) cognitive organisation of information about self and occupations, and (iv) support or reinforcement from others (i.e. teacher or counsellor). By reexamining through meta-analysis 52 studies of vocational interventions, Spokane and Oliver (1983) found that generally effects were beneficial. Class or group interventions were more effective than those for individuals although further research in the area of alternative forms of career intervention is needed. This review placed emphasis on the importance of relating the treatment to outcome goals. For purposes of evaluation the issue of measuring outcome goals is vital.

In many studies, as in the present study, the outcome goal was an improvement in the effectiveness of the subjects' career decision-making techniques which included knowledge about careers and where to find such information. One possible measure of these outcomes is provided by the equivalent forms of one of the tests in the New Mexico Battery (Healy and Klein, 1973) which is divided into scales for Decision Sources and Decision Actions. This allows the information component to be examined separately from the career decision process. Other possible measures such as the career Development Inventory (Super et al, 1981) are biased toward specific career development theory and career maturity constructs. Most measures examined placed more emphasis on ability and interests than on sociological or economic influences. (Healy, 1984). Studies focussing on evaluation of interventions aimed at teaching career decision-making will be reviewed in more detail.

A number of such studies have been carried out. These findings provide general support for teaching career decision-making skills in order to encourage effective career choice. Glaize and Myrick (1984) found that both small group work and computer guidance equally increased students' ability to clarify career goals and raised their career maturity levels. Berman et al (1977) using a community or university based supportive learning environment also found similar increases in career maturity from teaching career skills. Other interventions which successfully increased career decision skills as measured by Decision-making Checklists, included interactive computer use combined with counselling interviews (Cochran et al 1977) and video taped counselling combined with both individual and group counselling. Using both a measure of career maturity and of behaviour (requests for career information), Jepsen et al (1982) demonstrated gains on both these measures after behavioural exploration careers with field trips. These studies serve to emphasise the variety of styles of intervention possible.

Many of the studies of interventions have been carried out with college students. Career courses tend to run for a semester and involve both individual and group exploratory or counselling sessions. Group work with students of this age is particularly effective in increasing career decision-making skills (Evans and Rector, 1978, Johnston et al, 1981 and Krumboltz et al, 1982). Laskin and Palmo (1983) ran high school programs to increase decision-making skills and develop students' personal identity images. The outcomes as gauged by a career maturity measure, were particularly successful when the program was tailored to students' needs. Standardised programs were less successful, a result supported by Tinsley et al (1984).

Krumboltz and Rude et al (1982) investigated the idea of good and bad strategies for decision-making. A values guided search was more productive than a general search for students. This idea was extended to emphasise the importance of teaching career decision-making as a set of skills, so as to encourage the use of effective strategies, especially when a counsellor was not available.

In 1978 Egner and Jackson developed a careers program for college students designed to increase career maturity, the effectiveness of career decision-making and encourage the seeking of career information. Results showed that non academic students showed the greatest gains in decision-making skills while academic students gained more on the career maturity measure. The programme was therefore generally effective but a ceiling effect was shown by academic students of high ability who had high scores initially and therefore made minimal gains in career decision-making skills. Slower learners in other studies (Perrone and Kyle, 1975, Baker and Popowice, 1983) also showed more increase in general careers activities than other students.

In a study by Evans and Cody (1969) school students were found to employ more effective decision-making strategies when directed practice was used in the teaching of career decision skills. The dependent variable was a criterion defined as, the transfer of a learned career strategy into differing career choice situations, and its successful fulfilment was established by a panel of judges. Results indicated learning differences between oral and written practise which were difficult to attribute to a particular aspect of the intervention. It should be noted that in contrast to previous research the actual process of career decision-making (as separated from the collection of information relevant to the decision) was being studied.

A comparison, mentioned earlier, of different methods of teaching career decision skills would seem to favour groups/ interventions (Spokane and Oliver, 1983). Wachowiak (1972) in a study of group programmes and individual counselling towards choice of college students, found that students in groups showed greater increases in ratings of certainty toward subject choices, than those of either the control (no intervention) group or individuals receiving personal counselling.

In a similar study Smith and Evans (1973) used both Decision-making checklists and counsellor assessment of increased career information seeking activity to evaluate the teaching of decision skills. Group intervention was more effective than individual counselling for decision making, or no intervention.

Only a few studies really consider career decision style as it relates to the decision process. In a review Baumgardner (1977) stated that because career planning and choice seemed to involve a mixture of rational and non rational reasoning styles, perhaps the career decision process should be conceptualised as a quasi-rational procedure. Thus the appropriate career decision process may depend on the goals of the individual and the influences of the environment calling for the use of a variety of decision styles by each decision-maker. Baumgardner (1977) also sees systematic planning as creating order among career realities where it

does not exist. No research has yet been carried out to test this assumption of 'quasi' rationality.

Sarnoff and Remer (1982) used guided imagery as a way of generating career alternatives and classified subjects according to Harrens Career decision styles. Rational thinkers generated more useful career alternatives than did subjects with dependent or intuitive career decision styles. Barker (1981) assessed a "Career Planning and Decision-making for College" course for increases in the use of Rational career decision style for career decision-making. The researchers tried to locate more specifically where improvement in the process of career decision-making occurred but found significant improvements only in knowledge of occupational information and identifying career information sources. The present study also assessed these two aspects of the career decision process as a dependent variable.

In a study of students who used Rational career decision style, Phillips and Strohmer (1983) found that this style assisted their progress past the exploratory stage of the career choice process. Other students without such a rational career decision style spent an excess of time and effort on early pre choice areas of career decision-making.

The final study by Rubinton (1980) raises the idea of teaching students career decision-making skills using interventions suited to their dominant career decision style. Measures of both career maturity and certainty of vocational choice showed that rational decision-makers gained most from a rational intervention and those with intuitive decision style found an intuitive intervention effective. Dependent decision-makers showed no gains for any of the interventions and this style was considered an ineffective method of making successful career choices.

From the research it would appear that career decision-making interventions may be affected by the ability and decision style of the decision-maker. There is a suggestion that an intervention emphasising rational decision style works well for those who already use this style but not necessarily for those using other styles. Thus the present study using an intervention assuming rationality of style examines its relative effectiveness for individuals with different styles.

## 1.6 Objectives and Hypotheses

The major objective of the study was to assess the effectiveness of a career decision-making intervention in increasing students decision-making skills and to explore what factors were associated with the success or otherwise of such a careers program.

The first hypothesis examined the effect of the careers intervention generally as follows:

### Hypothesis I

"Students who receive a career education program which emphasises decision-making skills, will show greater improvement in their knowledge about both Sources of information and the Actions to follow in making a decision, than will students whose Career education program does not deal specifically with decision-making."

Career decision-style is suggested as one influence on career decision-making interventions which could alter the effectiveness of the intervention (Rubinton, 1980). As the career interventions used in this study were both designed to be rational/logical teaching units the second hypothesis aimed to test the effectiveness of the intervention for rational decision-makers.

### Hypothesis II

"Students with a Rational career decision style will benefit more from career decision-making skills training, than students with other decision styles."

While little mention of academic ability is made in the research some part of the effectiveness of career interventions may relate to this variable and this was assessed by the third hypothesis in two parts. The ceiling effect (Egner and Jackson



1978) for those with higher academic ability tends to suggest that greater gains will be obtained among low ability students. Because of the limited research directly relevant to this aspect of the present study these hypotheses are stated with caution.

### Hypothesis III

- "(i) Students with a low level of academic ability will benefit <sup>more</sup> from career decision-making skills training than students with higher academic ability regardless of career decision style.
- (ii) Students with a Rational decision-making style and low academic ability will benefit more from career decision-making skills training than those with low academic ability and other styles."