CHAPTER THREE
HOLLAND’S THEORY OF PERSONALITY TYPES

Introduction

In Chapter Two the concept of industrial tourism was introduced and discussed. It was suggested that one of the reasons why people visit industrial tourism attractions is that they are personally interested in the attraction. It would be useful for managers of tourism attractions to be aware of the types of people who visit particular types of attractions, as it would be helpful in their marketing campaigns. In Chapter Three, it is suggested that Holland’s (1985a) theory of personality types may be a useful means of identifying the type of people who visit particular types of tourism attractions. Therefore, this chapter begins with a very brief overview of personality theories in general, and identifies Holland’s (1985a) theory as an example of a trait theory. The chapter then looks in detail at one particular personality theory, that is, Holland’s (1985a) theory of personality type and its two main test instruments, the Vocational Preference Inventory and the Self-Directed Search. A justification is provided of why Holland’s personality theory was chosen for this particular study, and a brief overview of another well-known, and well-respected personality theory, the Myers-Briggs Type Indicator, is presented as a comparison with Holland’s theory.
Chapter Three then considers the application of Holland’s theory to behaviour other than occupational choice, that is, career choice and leisure choice. Consideration is then given to the relationship between personality and leisure activities, with particular reference to the application of Holland’s theory to leisure behaviour, and because Holland devised an instrument to apply his personality theory to leisure activities, this chapter includes a review of Holland’s Leisure Activities Finder (Holmberg, Rosen and Holland 1990). A subset of leisure activities is, arguably, tourism, and so the chapter considers the relationship between personality and leisure-type tourism behaviour. This relationship is at the heart of the discussion, as it considers tourist attraction choice behaviour. A review is then provided of previous research on the application of personality theories to tourism behaviour and of applying Holland’s theory to tourism behaviour.

The chapter introduces personality and gender, and tourism behaviour and gender, and considers the relationship between personality, gender, and tourism behaviour. It also considers the influence of other demographics on tourism choice behaviour. Chapter Three ends with the provision of a list of propositions and hypotheses that attempt to relate Holland’s theory to tourism choice behaviour. The suggestion is made that Holland’s theory can be successfully applied to tourism choice behaviour and, in particular, tourism choice behaviour at industrial tourism attractions. Therefore, the focus of Chapter Three is on the application of one theory of personality to the prediction of tourism choice behaviour.
Brief Overview of Personality Theories

The following discussion provides a brief sketch of some of the important aspects of major personality theories and concentrates on trait theory in particular. Madrigal (1995) suggested that there are five distinct perspectives of personality theories, which are psychoanalytic and neoanalytic; cognitive; humanistic/existential; socio-behaviouristic; and trait. In the (Freudian) psychoanalytic approach, behaviour is seen primarily to be energised and directed by innate and unconscious forces. Cognitive development theory emphasises learning as a function of development in that personality develops through “an invariant sequence of stages which everyone goes through in the same order, though not at the same rate” (Iso-Ahola 1980, p. 203). The humanistic/existential theory considers the tendency to actualise one’s inherent potentialities and to achieve authentic being (Maddi 1996). The socio-behaviouristic theory suggests that individual differences in behaviour are due to the variety of learning conditions that the individual has encountered, so that the growth of personality is a function of learning (Iso-Ahola 1980). Trait theory explains personality as a complex and differentiated structure of traits. A trait is described as a “mental structure” that accounts for regularity and consistency in behaviour (Cattell 1950). Loudon and Della Bitta (1993, p. 305) suggested that trait theory is useful as it has demonstrated adequate utility for predicting behaviour among the general population.
Holland’s (1985a) personality theory, which is applied in the present study, can be described as an example of a trait theory. The idea for the typology resulted from Holland’s (1973, 1985a) frequent observation that several broad classes account for most human interests, traits and behaviours. He suggested that the six types developed in his typology are analogous in some ways to the types proposed by earlier researchers, but he believes that his theory is most consistent with Staats’ (1981) theory of social behaviourism where the six types are “models of six common clusters of personality or behavioural repertoires that occur in our society” (Holland 1985a, p. 18). Therefore, the following discussion provides an overview of an example of a trait theory, that is, Holland’s theory of personality types and its applicability to tourism choice behaviour.

**Holland’s Theory of Personality Types**

Holland (1973, 1985a) developed a typology of six personal orientations to life: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). He defined each of the six different personality types in terms of its characteristic activities, interests, and competencies (Table 3.1 summarises Holland’s Personality Typology).

Holland devised a hexagonal model to illustrate the relationship between each personality type and to describe the concepts of consistency and differentiation (Figure 3.1). Consistency is the degree of relatedness of types within a person. For example, the personality pattern of RI is more consistent than CA, or has a high consistency pattern.
<table>
<thead>
<tr>
<th>Type</th>
<th>Personality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>Possesses mechanical and athletic ability and lacks social competencies; values money, power, status and other concrete things. Is inclined to be asocial, conforming, frank, genuine, materialistic, persistent, uninsightful, and uninvolved. Preferred vocations: Automotive engineer; Boiler maker; Electrician; Farmer</td>
</tr>
<tr>
<td>Investigative</td>
<td>Possesses mathematical and scientific ability and lacks leadership ability: values science. Is inclined to be analytical, cautious, critical, complex, curious, independent, intellectual, introspective, precise, rational, and unassuming. Preferred vocations: Chemist; Computer operator; Laboratory technician; Mathematics teacher</td>
</tr>
<tr>
<td>Artistic</td>
<td>Possesses artistic and musical ability; values aesthetic qualities. Is inclined to be emotional, expressive, idealistic, imaginative, impulsive, intuitive, non-conforming, original, and sensitive. Preferred vocations: Actor/Actress; Artist; Interior decorator; Photographer</td>
</tr>
<tr>
<td>Social</td>
<td>Possesses social competencies; likes to help others. Has teaching ability and lacks mechanical and scientific ability; values social and ethical activities and problems. Is inclined to be co-operative, empathic, friendly, generous, helpful, idealistic, patient, sociable, tactful, and warm. Preferred vocations: Funeral director; Librarian; Minister/Priest; Social Science teacher</td>
</tr>
<tr>
<td>Enterprising</td>
<td>Possesses leadership and speaking skills and lacks scientific ability; values political and economic achievement. Is inclined to be adventurous, agreeable, ambitious, energetic, extroverted, optimistic, self-confident, and sociable. Preferred vocations: Contractor; Lawyer; Radio/TV announcer; Real estate sales person</td>
</tr>
<tr>
<td>Conventional</td>
<td>Possesses clerical and numerical ability; values business and economic achievement. Is inclined to be conforming, conscientious, defensive, inflexible, methodical, obedient, orderly, thrifty, and unimaginative. Preferred vocations: Bookkeeper; Key punch operator; Post office clerk; Typist</td>
</tr>
</tbody>
</table>

Source: Adapted from Kelso (1986).
Other examples of high consistency patterns are RC, IA, AI, and SE. Low consistency patterns are RS, IE, AC, and SR, and middle consistency patterns are IS, IC, AR, and SC. Differentiation is the extent to which a personality pattern is defined. A well-differentiated pattern is one that resembles a single type very closely (Kelso 1986). Undifferentiated or poorly defined personality types are people who resemble several of the six types to about the same degree. Thus, Holland believed that the dominant features of an individual’s personality, represented by his or her type, are the major influence on his or her choice of vocation. Holland, in extending the theory, believed that personality
types flourish in congruent environments. A congruent environment is one that provides opportunities and rewards that match an individual's preferences and abilities, for example, a Realistic type in a Realistic environment (Holland 1985a). He said that because the “personality types and the environmental models share a common set of constructs, it is possible ..... to predict the outcome of pairing people and environments” (Holland 1985a, p. 34). Therefore, if a certain personality type is placed in a similar environment then there should be “a number of desirable outcomes, such as work satisfaction, achievement, and vocational stability” (Holland 1985a, p. 35).

If Holland's theory is applied to a tourism situation then the personality type (that is, the dominant feature of an individual's personality) may motivate the person to visit the attraction but the consistency and differentiation of the personality pattern will reflect the level of satisfaction derived from the visit.

In response to reviewers who suggested that there must exist more than six kinds of vocational interests, Holland noted that the evidence strongly suggests that there are only four to eight independent kinds of vocational interests and only four to eight different kinds of occupations. He suggested that factor analysis demonstrated that a “limited number of factors account for the individual differences in vocational interests and occupational data” (Holland, Powell and Fritzsche 1994, p. 52). However, he also admitted that the use of six types is a compromise, as six types and their permutations are “easy to comprehend, interpret, and use in practice and research” (Holland, Powell and
Fritzsche 1994, p. 52). He suggested that, although six may not be the correct number, and there is no precise way to determine that number, it is close to the average number obtained by a wide range of diverse methods and data over a long period of time (Holland, Powell and Fritzsche 1994, p. 52).

To make practical use of his typology, Holland initially devised the Vocational Preference Inventory (VPI) (Holland 1958, 1973) and then the Self-Directed Search (SDS) (Holland 1977, 1985b), both of which identify a person’s personality and are used as guides to educational and vocational planning. However, the VPI is oriented more to the needs of vocational counsellors engaged in one-to-one counselling, while the SDS relies more on the person’s initiative and self-direction as it is self-scored (Holland 1985d). The Vocational Preference Inventory (1985e) is a personality-interest inventory composed entirely of occupational titles. The subjects complete the inventory by indicating the occupations they find interesting and appealing, and those which they dislike or find uninteresting (Holland 1985e). The Vocational Preference Inventory records 11 different aspects, which are the six personality types of Realistic, Investigative, Artistic, Social, Enterprising, and Conventional, and five other dimensions, namely Self-control, Masculinity-Femininity, Status, Acquiescence and Infrequency (which measure atypical vocational preference and help to identify individuals who have been uncooperative or have given random responses) (Holland 1985d).
Holland made the following assumptions in the development of the Vocational Preference Inventory:

- The choice of an occupation is an expressive act that reflects a person's motivation, knowledge of the occupation in question, insight and understanding of self and abilities (Holland 1985d).

- People perceive occupational titles in stereotyped ways. Occupational stereotypes or generalisations are stable over long periods of time and are relatively independent of occupational experience or sex of the perceiver (Holland 1985a).

- Different occupations furnish different kinds of gratification or satisfactions and require different abilities, identifications, values, and attitudes. This assertion has extensive empirical support from studies that relate vocational interests to personality variables, psychiatric status, values, and attitudes (Holland 1985d).

- Interest inventories are essentially personality inventories. Interest and personality inventories are identical in principle and provide similar information about the person, although their content is quite diverse. Both kinds of inventories reveal how the person perceives self and milieu (Holland 1985d).

Holland (1985d, p. 2) pointed out that these assumptions “are crucial, for they are fundamental to the reliability and validity of the inventory”.

In the Self-Directed Search (1977, 1985b), individuals answer a series of questions that help them determine which occupations are most suited to their personality type. A three-letter code is produced for each individual, showing the three highest-ranked personality
types for that individual, in order, such as "ESC". In the Self-Directed Search (SDS) respondents indicate which activities they would like to do and which they dislike doing or would be indifferent to. Examples of the activities listed under the RIASEC headings include (with Holland's categories in parentheses): "To use metalworking or machine tools" (R); "Work on a scientific project" (I); "Read or write poetry" (A); "Help others with their personal problems" (S); "Head a group in accomplishing some goal" (E); and, "Keep detailed records of expenses" (C).

Respondents then indicate which activities they can do well or competently and which activities they have never performed or perform poorly. Examples of competencies include: "I can repair furniture" (R); "I can interpret simple chemical formulae" (I); "I can sketch people so that they can be recognised" (A); "I can plan entertainment for a party" (S); "I have acted as leader for some group presenting suggestions or complaints to a person or authority" (E); and, "I can file correspondence and other papers" (C).

Respondents also indicate which occupations in the list interest or appeal to them, or those which they dislike or find uninteresting. The occupations listed include: carpenter and radio operator (R); zoologist and astronomer (I); journalist, playwright, and composer (A); speech therapist, and high school teacher (S); salesperson, and hotel manager (E); and, bookkeeper and bank teller (C). Respondents also rate themselves on a list of traits when compared to other persons of their own age. The abilities listed are: mechanical ability and manual skills (R); scientific and maths ability (I); artistic and musical ability.
(A); teaching and friendliness (S); sales and managerial skills (E); and, clerical and office skills (C).

Once the SDS has been completed, the respondent adds up the scores for each part of the questionnaire and arrives at a three-letter summary code. Holland's Occupations Finder (1985c) (which lists 1,156 occupations) is then used to locate the occupations that correspond to the respondent's summary code. If no identical code is found then occupations are sought in the Occupations Finder that are similar to the summary code. As Holland, Powell and Fritzsche (1994, p. 3) noted, "by indicating the three types a person resembles most, the three-letter Summary Code allows for complexity of personality and reduces some of the problems inherent in categorising a person as a single type".

**Justification for Selecting Holland's Personality Theory**

Tracey and Rounds (1993) noted that Holland's (1973, 1985a) theory of vocational personalities and work environments is widely considered one of the most influential career development theories and occupational taxonomies in vocational psychology. It was estimated by Hyland and Muchinsky (1991) that from 1973 to 1990, approximately 700 studies were directed toward various aspects of Holland's (1973, 1985a) theory. Taylor et al. (1979) noted that Holland (1973) has summarised over 100 of these studies with more than 90 providing some support for his formulations.
In a critical review of the 1985 version of the SDS, Daniels (1989, p. 736) stated that Holland’s purpose of providing vocational counsellors with a “self-administered, self-scored, and self-interpreted vocational counselling tool” had been achieved. He suggested that the SDS represented a popular means for conducting a search for the proper person-environment match.

As Holland (1985a, p. 24) pointed out:

“Although there seems to be no one best method to assess a person’s personality type, the Vocational Preference Inventory, the Self-Directed Search, and the use of current preference or occupation have either produced more coherent results or have special advantages by virtue of their simplicity or theoretical construction”.

Holland’s model, therefore, probably represents one of the most thoroughly researched classification schemes in all of applied psychology (Eberhardt and Muchinsky 1984). The theory is operational (the main constructs are well-defined) and has generated a wide range of supportive data (Walsh, Craik and Price 1992). It has been described as a well-researched, practical and highly recognisable career development theory and Miller (1991, p. 364) suggested that “numerous clones of Holland’s taxonomy abound in the career development marketplace, testifying to the practicality of Holland’s theory”.

Tinsley (1992, p. 109) noted that the Journal of Vocational Behavior currently receives “more manuscripts examining aspects of Holland’s theory than any other topic”, while
Norman (1994, p. 21) noted that Holland’s theory is “tough, practical, compact and useful”. Holland’s (1973, 1985a) theory specifically measures “interests”. This is relevant in the present study as it provides the opportunity to challenge the constant assumption that people visit attractions in which they are “interested”. In addition, Holland’s (1973, 1985a) theory has not previously been directly applied to tourism which means that this study involves the useful, novel application of a well-regarded tool.

As the SDS was adapted for use in the Australian environment, the present study was able to use the Australian version of the SDS. In the adaptation of the SDS for the Australian environment, changes were made to the terminology, vocabulary, and phraseology where necessary, and several inappropriate items in the self-assessment booklet were replaced entirely. Lokan (1994) noted that advice was sought from several careers teachers and vocational psychologists. In addition, about 50 students in Years 9 and 10 from two different types of school were asked for suggestions concerning out-of-date, inappropriate, or unintelligible items. As a result, most changes were made to the occupational titles with some changes being made in each of the six RIASEC categories (Lokan 1994).

As mentioned earlier, the present study was designed to identify individuals who would be pre-disposed to visit certain types of tourism attractions, and in particular, industrial tourism attractions. In addition, the study was designed to determine if industrial tourism attractions are viewed as being distinctly different from other types of attractions and if
industrial tourism patrons are different from patrons of other types of attractions. Therefore, the study required a surrogate measure to determine how people behave. Although Holland’s (1985a) personality theory was originally designed as a guide for occupational choice, it is suggested that the theory can be applied as a guide for tourism choice behaviour, as they are both overt, tangible, manifestations of personality.

**Overview of Myers-Briggs Type Indicator**

Murphy, Conoley and Impara (1994) noted that there are 669 different commercially published tests currently available to measure personality. One of the better known personality tests is the Myers-Briggs Type Indicator (MBTI). Plog (1994, p. 215) described the MBTI as a “very-easy-to-administer test” which requires little time to be administered and “is not obnoxious to respondents”. In the same way that Holland created the SDS based on his theory, so Myers and Briggs created the MBTI based on Jung’s (1933) theory of psychological types.

McGuiggan (1998, p. 7) summarised the Myers-Briggs Type Indicator as follows:

“The MBTI describes a person’s personality on four dichotomous dimensions indicating a person’s preference for source of psychological energy (extraversion versus introversion), perception (sensing versus intuition), making judgements (thinking versus feeling), and orientation to the outer world (judging versus perceiving). The four preferences combine to generate 16 personality types. The
MBTI questionnaire is a forced-choice, self-report inventory, virtually self-administering and designed for use with normal subjects. The questions consist of behavioural preferences and a number of preferred self-descriptive adjectives. Each individual question is designed to elicit a preference for one of the four dimensions. The responses for each question are weighted and a total score for each of eight preferences recorded. The scores are then converted to a preference score for each of the four scales that reflect the relative preference for one pole over the other (taking omissions into account). These four preferences indicate a person’s MBTI type”.

As with Holland’s SDS, Plog (1994, p. 216) noted that the MBTI can be very useful in a psychographic-based research setting and that the dimensions are useful for determining the types of people who are attracted to specific kinds of advertising or who like to participate in selected activities at destinations. He also suggested that it is useful generally in situations that require “greater understanding of the psychology of travellers”. However, Plog (1994, p. 216) suggested that the weakness in the MBTI is that “the interpretation of these dimensions requires the analyst to have a strong background in personality theory and clinical research”. This contrasts with Holland’s SDS which is easily interpreted and understood.
The Application of Holland’s Theory

Holland, Powell and Fritzscbe (1994) reported that Holland’s typology and its tools (the classification, the SDS, and the VPI) lent themselves to applied and basic research in education, business, psychology, and sociology, and highlighted the wide range of research activity that has stemmed from the theory and its typological origins. They indicated also that the SDS, in its published form or with minor changes, has been used successfully with males and females; inner-city, suburban, and rural high school children; college students; young children; and employed and unemployed adults. The following discussion demonstrates that Holland’s theory of personality type and the SDS have been successfully applied, not only to career counselling, but to other areas such as educational and leisure choice.

Personality Theory and Career Choice

Rosen, Holmberg, and Holland (1991) derived the Educational Opportunities Finder to be used in conjunction with the SDS. The Educational Opportunities Finder lists over 750 post-secondary fields of study by Holland code. The listing includes “technical and vocational training programs as well as community and baccalaureate college majors” (Holland, Powell and Fritzscbe 1994, p. 11). Once the respondent has completed the SDS, reference is made to the Educational Opportunities Finder to “find educational opportunities, primarily programs of study in post-secondary educational institutions, that
are consistent with his or her Holland Summary (or occupational) Code” (Rosen, Holmberg, and Holland 1991, p. 3).

The following paragraph explains how the Educational Opportunities Codes were derived:

“Holland summary codes were assigned to each program of study by one of several methods. Many were derived from the occupation that is associated with the program (for example, the Holland code for Air Traffic Controller was assigned to the program of study of Air Traffic Control). Some programs (for example, Agricultural Business) had no exactly corresponding occupation. In these cases, the NOICC Master Crosswalk, Version 4.0 (National Crosswalk Service Center 1994) was used to identify the most nearly corresponding occupations, from which the code was derived. In a few cases, codes were identified on the basis of the professional judgment of two from a panel of three professional career counsellors. The second edition of the Dictionary of Holland Occupational Codes (Gottfredson and Holland 1989) and the 1994 edition of the Occupations Finder of the Self-Directed Search (Holland 1994) were the sources for the occupational summary codes” (Holland, Powell and Fritzsche 1994, p. 21).

The application of Holland’s theory to educational choice was demonstrated during the pilot study for the present study. The author examined the distribution of Holland codes within a group of university students, to try to establish which codes were represented and
the degree of homogeneity of the codes within the group, and hence the relationship between Holland codes and career choice as indicated by tertiary course selection. This objective was of interest in itself, in terms of an initial characterisation of Australian tourism students. However, it also was pursued as a means of 'calibrating' the usage of Holland's approach to the larger issue of tourism behaviour. That is, if the more traditional application of Holland were supported (the prediction of occupational or educational choice), then a form of concurrent validation would be indicated for the results obtained in relation to tourism choice behaviour. In addition, the pilot study was designed, not only to apply Holland's theory to educational choice, but to give the author practice in using the SDS and to test the effectiveness of the instrument in an Australian environment.

Figure 3.2 illustrates the proposed relationship between personality, career choice, and tourism behaviour. It was not intended to pursue, directly, the possible career choice - tourism behaviour linkage in the pilot study and the proposed personality - tourism behaviour linkage, tested as part of the pilot study, is discussed later in this chapter. Therefore, the research hypothesis for this part of the pilot study was that personality, as represented by Holland codes, is related to career choice, as represented by the Holland codes of the university degree program being pursued.

The subjects for the pilot study were 32 second year students who were studying for a Bachelor of Business degree in Tourism Management at a Victorian university. The
majority of students were aged between 18 and 24 years, and 78% were female. To
determine the subjects’ personality types, the Australian version of the SDS was
completed. A three-letter Summary Code was obtained for each subject from the three
highest summary scores for that subject on the SDS.

The pilot study revealed that the respondents had substantially homogeneous Holland
codes, with the four most common three-letter codes containing the same three letters,
viz., E, S, and C (Table 3.2). [It may be recalled that Holland’s typology of six different
personal orientations to life was: Realistic (R), Investigative (I), Artistic (A), Social (S),
Enterprising (E), and Conventional (C).] As may be seen, 20 subjects of the sample of 32
(or 63%) shared these three letters, and overall, of the 96 letters involved in the 32 three-
letter codes, 83 were E (30), S (29), and C (24).
Table 3.2 Holland Codes in the Australian Sample

<table>
<thead>
<tr>
<th>Holland Three-letter Code</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESC</td>
<td>8</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>CES</td>
<td>5</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>SEC</td>
<td>4</td>
<td>13</td>
<td>53</td>
</tr>
<tr>
<td>CSE</td>
<td>3</td>
<td>9</td>
<td>63</td>
</tr>
<tr>
<td>ASE</td>
<td>2</td>
<td>6</td>
<td>69</td>
</tr>
<tr>
<td>CSA</td>
<td>1</td>
<td>3</td>
<td>72</td>
</tr>
<tr>
<td>CSI</td>
<td>1</td>
<td>3</td>
<td>75</td>
</tr>
<tr>
<td>EAC</td>
<td>1</td>
<td>3</td>
<td>78</td>
</tr>
<tr>
<td>EAS</td>
<td>1</td>
<td>3</td>
<td>81</td>
</tr>
<tr>
<td>ESA</td>
<td>1</td>
<td>3</td>
<td>84</td>
</tr>
<tr>
<td>ICE</td>
<td>1</td>
<td>3</td>
<td>87</td>
</tr>
<tr>
<td>REI</td>
<td>1</td>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>SAE</td>
<td>1</td>
<td>3</td>
<td>93</td>
</tr>
<tr>
<td>SEA</td>
<td>1</td>
<td>3</td>
<td>96</td>
</tr>
<tr>
<td>SEI</td>
<td>1</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

Total 32 100 100

Source: Author.

In order to interpret these findings, it was necessary to know the comparable proportions of codes in a broader population. That is, do some Holland codes occur more frequently than others in the total population? Holland, Powell, and Fritzche (1994) noted that some codes do occur more frequently than others, with the distribution of SDS codes (one-, two- and three-letter) across the six categories being extremely uneven. If the relevant population in this present case is taken to be university or college undergraduate students, then it is possible to gain some perspective from Table 3.3, although data from the United States have been used for comparison because Australian data are not
Table 3.3: Distribution of First-Letter Summary Codes for University and High School Students

<table>
<thead>
<tr>
<th>Holland Code</th>
<th>United States of America College Students</th>
<th>Australian High School Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (%)</td>
<td>Female (%)</td>
</tr>
<tr>
<td>Realistic</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Investigative</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Artistic</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Social</td>
<td>26</td>
<td>53</td>
</tr>
<tr>
<td>Enterprising</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Conventional</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>n =</td>
<td>399</td>
<td>716</td>
</tr>
</tbody>
</table>

Source: Adapted from Holland, Powell, and Fritzlsche (1994) and Lokan (1994).

Available for the broad population (the normative sample for Australia being high school students rather than college students).

It appears that the small Australian student sample in the pilot study was not radically different to the large US sample, in that some Holland codes are far more likely to be identified than others (such as ‘S’), and that there are sex-related differences in code proportions (although any sex-related differences were not statistically significant in the Australian data, and were not pursued further in the pilot study). However, it would appear that in the pilot study the females studying for a degree in business are different to females in general, in terms of their first code. The dominant ‘S’ code in US college females may be because more females traditionally study humanities than business related
courses. Table 3.4 indicates that the three-letter codes for the three major university
disciplines are somewhat distinct and Figure 3.3 illustrates that only one letter of each of
the three-letter discipline codes corresponds to that of the next discipline. This
demonstrates that each discipline is substantially different to the next in terms of Holland
code. This supports the argument that the respondents in the pilot study were reflective of
students studying for a Business degree, rather than a non-business-oriented degree, and
is consistent with the Australian results of Taylor and Kelso (1973). However, it is
noteworthy that the supposed Holland code for Travel-Tourism Management (ESR) was
not recorded for any of the subjects in the Australian sample. In fact, the ‘R’ code
appeared only once in one three-letter code for the entire sample.

Although the results of the pilot study were not conclusive, due principally to the small
sample size and its restriction to tourism management students, the hypothesis was
supported in that Holland’s personality type did seem to characterise the respondents in
terms of their manifest career (course) choice. In that light, the pilot study was valuable.
Clearly, as the sample was not representative of the whole population, especially as the
group was substantially homogeneous in relation to the Holland types, this pilot study
confirmed the need for the main survey to have a larger sample size, ensuring the
inclusion of more males so that a comparison could be made between males and females.
Table 3.4: Holland Codes for Three Major University Disciplines

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Subject Name</th>
<th>Holland Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>Physics</td>
<td>IRE</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>IRE</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td>IRE</td>
</tr>
<tr>
<td>Humanities</td>
<td>Humanities</td>
<td>SAI</td>
</tr>
<tr>
<td></td>
<td>Philosophy</td>
<td>SAI</td>
</tr>
<tr>
<td>Business</td>
<td>Business</td>
<td>ESC</td>
</tr>
<tr>
<td></td>
<td>Travel-Tourism Management</td>
<td>ESR</td>
</tr>
</tbody>
</table>

Source: Adapted from Rosen, Holmberg and Holland (1991).

Figure 3.3: The Relationship Between the Holland Three-Letter Codes for the Major University Disciplines

Source: Adapted from Rosen, Holmberg and Holland (1991).
Personality Theory and Leisure Behaviour

This section provides a review of research into the application of personality to leisure activities and then, in particular, the application of Holland's theory to leisure behaviour and to tourism behaviour.

Argyle (1996, p. 4) defined leisure as a general category of behaviour which has certain common themes, that is, the "enjoyment of freely chosen activities carried out for no material gain". Similarly, Beard and Ragheb (1983) defined leisure activities as non-work activities where the individual is under no obligation to participate. These activities can be either active or inactive and may include sports, outdoor activities, social activities, watching television, or reading. Iso-Ahola (1980, p. 201) suggested that "personal experiences establish and modify one's perceived competence which, within the confines of optimal arousal, determines which leisure activities are chosen (if freedom of choice is given)".

Madrigal (1995) noted that various authors have related personality to leisure activity decisions (for example, Allen 1982; Driver and Knopf 1977; Howard 1976; Martin and Myrick 1976; Melamed 1977; and, Moss, Shackelford, and Stokes 1969). Mannell (1984) suggested that most studies of personality as a predictor of leisure behaviour have used general personality inventories to measure individual differences, but that there is a lack of a theoretical approach that could identify leisure-specific personality differences that
may help in understanding leisure behaviour. Nias (1985) also criticised these studies by saying that most of them demonstrated that the relationship between leisure behaviour and personality was not very robust. Similarly, Iso-Ahola (1980) criticised most of these early studies for lacking definitional clarity in variable operationalisations, for failing to rely on theory for the inclusion of specific activities, and for lacking consistency in measuring personality. Recently, McGuiggan (1998) used the Myers-Briggs Type Indicator to test leisure preferences and found that the ability of the MBTI scales to explain leisure attribute preference varied from scale to scale with not all attributes of leisure equally likely to be influenced by personality. Therefore, it would appear that, although researchers have considered the relationship between leisure behaviour and personality there has been to date, limited evidence to support such a relationship. However, this may be due to the lack of an acceptable personality measurement.

Holland's Personality Theory and Leisure Behaviour

A secondary assertion by Holland is that personality types flourish in congruent environments, which suggests that the more an environmental pattern resembles a personality pattern, the more a person will find the environment reinforcing and satisfying. Since a congruent environment comprises, in part, people who have "similar interests, competencies, values, traits and perceptions" (Holland 1985a, p. 49), there is a greater likelihood that a person will participate in those situations or have a greater interest in those environments, than in incongruent environments. A logical extension of
this notion would appear to be that, if the perception of a tourism attraction is that it has a congruent environment for certain types of people, then there will interest among people of those types to visit that environment. Norman (1994) reviewed the six Holland types and six parallel environments and, based on research by Hanson and Campbell (1985) and Walsh and Holland (1992), developed an overview of the types of environments which Holland types would prefer (Table 3.5).

Although the majority of the empirical work has been focused on the use of Holland's theory in education and business, studies have applied Holland's theory to nonvocational aspects of a person's life, to investigate Holland's belief that a person's "personality pattern determines a person's choice of nonvocational activities and recreations" (Holland 1985a, p. 32). It is this relationship that is considered in this thesis.

Following a literature review, it would appear that there are at least 20 studies that have applied Holland's theory to avocational aspects of a person's life. (The term "avocational" is used in this context to describe behaviour other than vocational behaviour.) Much of the empirical research which has used Holland's theory as a basis for measurement and interpretation, and has applied the theory to avocational aspects, focused on testing the following:

- the validity of applying Holland's categories to leisure activities (Taylor et al. 1979; Cairo 1979);
<table>
<thead>
<tr>
<th>Type</th>
<th>Preferred Activities and Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>Like activities and people who represent interest areas such as the outdoors and nature; mechanical, construction and repair activities; and military activities. Preferable environments - the outdoors, and sometimes rural areas.</td>
</tr>
<tr>
<td>Investigative</td>
<td>Prefer achievement-oriented environments which stimulate Investigative activities and allow a freedom of work styles, and where other Investigative people predominate - places such as universities, research laboratories, and medical and computer related facilities.</td>
</tr>
<tr>
<td>Artistic</td>
<td>Drawn to beauty and aesthetics. Like places where artistic action is stimulated, and where other Artistic people are. The Artistic environment must be unstructured and flexible, where self-expression is allowed. The Artistic environment fosters artistic achievements and competencies, such as places where artistic skills are taught, artistic items are housed, displayed, performed or created.</td>
</tr>
<tr>
<td>Social</td>
<td>Prefer environment to stimulate engagement in social activities and foster social competencies, where they can perform their skills and preferred behaviours. Prefer environment to be populated with many other Social people, so they can interact with, or entertain, others. These places may be schools, community agencies, organisations, meetings or special events.</td>
</tr>
<tr>
<td>Enterprising</td>
<td>Preferred environments are organisations of people, places where powerful or influential people are, or where they can be involved with entertaining, competition or buying and selling. Such places may be conventions or clubs, large or independently owned businesses, expensive resorts, sporting events, or markets, where the environment rewards display of such Enterprising values and goals as status, power and money.</td>
</tr>
<tr>
<td>Conventional</td>
<td>Prefer activities that require attention to detail and accuracy. These include collecting and organising materials, procedures, making models, charts and graphs, maintaining records and financial ledgers, writing reports, and operating business-type machinery. They are not comfortable with ambiguous situations, preferring to know exactly what is expected.</td>
</tr>
</tbody>
</table>

Source: Adapted from Norman (1994).
- the relationship between Holland's personality types, vocational and avocational choices, and life satisfaction (Campbell 1973; Melamed 1977 and 1986; Melamed and Meir 1981; Graef 1986; Chesson 1986; Pusz 1993; Melamed, Meir and Samson 1995; Meir, Melamed and Abu-Freha 1990; Parker 1990);

- the relationship between Holland personality types and the specific selection of leisure activities, i.e., non-work, preference-behaviours (Miller and Tobacyk 1987);

- the relationship between occupational preferences (as derived by the SDS), leisure preferences and sensation seeking (Schenk 1996);

- the extent to which Holland’s leisure or vocational measures of interests are congruent with a respondent’s self-estimated personality (Randolph 1992);

- the differences between leisure participants by Holland personality type (Norman 1994); and,


All the studies except one (Campbell 1973) demonstrated support for the use of Holland’s personality type in predicting leisure activities. This lack of support may be because Campbell used an earlier version of the VPI which has since undergone a number of revisions to substantially improve and update it, with the last three versions requiring changes to only a few items “as it became increasingly difficult to improve the item pool” (Holland 1985d, p. 3). In addition, Holland (1985d) states that the VPI interest scales now
demonstrate concurrent or predictive validity equal to, or exceeding, the concurrent or predictive validities of other scales.

Some of the studies which applied Holland's theory to avocational aspects, allowed respondents to list their preferred leisure activities without providing any prompts, whereas other studies developed a list of leisure activities and asked the respondents to indicate which was their favourite. For example, in the study by Taylor et al. (1979), a Leisure Checklist was developed of 36 leisure activities. The respondents were asked to indicate those leisure activities that they enjoyed. The list was made up of leisure activities taken from Holland's Self-Directed Search (six from each category). Therefore, in none of these studies were tourism activities explicitly included in the list of activities. It was, therefore, only incidental that tourism activities were included in some of the studies, as they were not asked for explicitly. For example, in the study by Taylor et al. (1979), the activities listed in the Leisure Checklist mainly included activities which occur around the home such as: “Reading books and magazines on scientific or technical subjects (I)”; “Writing short stories or poetry (A)”; “Following politics in the newspapers or on radio or TV (E)”; “Tidying up sheds, cupboards, drawers, etc. (C)”; “Making things like model aircraft, dresses, etc., using patterns or instruction kits (R)”; and, “Watching and listening to “in-depth” reports or documentaries on radio and TV (I)”. However, the list also included activities which could be defined as tourism activities if people travelled away from their place of normal residence to participate in the activity, such as: “Bushwalking, hiking, camping (R)”; “Attending sports events, pop concerts, films, etc.,
with a group of friends (S)”; “Visiting scientific and/or technical displays, fairs or
museums (I)”; and, “Visiting art galleries, exhibitions, plays, or concerts (A)”.

In 1990, Holmberg, Rosen, and Holland developed the Leisure Activities Finder (LAF)
which is a taxonomy of leisure activities based on Holland codes. By developing the LAF
Holland confirmed the applicability of the theory to the identification of appropriate
leisure activities and confirmed the need for a way of identifying the most appropriate
leisure activities. The 760 leisure activities in the LAF are divided into groups with labels
such as Collections, Nature, or Entertainment. Subjects calculate their Holland codes by
completing either the SDS or the VPI. Subjects then locate the leisure activities which
correspond to their Holland codes from the LAF, in order to identify those activities that
would seem to be suitable. For example, the leisure activities listed under Investigative
Activities are: Acrobatic flying; Amateur archaeologist; Amateur radio; Animal breeding;
Cat breeding; Darkroom processing; Dog breeding; Endangered animals and/or plants;
Hang gliding; Historical canals; Horse breeding; and, Hot-air ballooning. Miller (1991)
tested the effectiveness of the LAF by having students write down a leisure activity and
then separately complete the SDS and work out their leisure activity taken from the LAF.
When the two codes were compared there was a high degree of agreement between the
two sets of codes.

Similarly to leisure activities, tourism activities use discretionary time but tourism
includes “any activity concerned with the temporary short-term movement of people to
destinations outside the places where they normally live and work, and their activities
during their stay at these destinations” (Tourism Society 1979, p. 70). However, a tourism
activity does not need to involve an overnight stay. Therefore, daytrips can also be
included as tourism if the person travels to a destination outside their home area. The
more the participation in an activity involves travelling to a destination or the greater the
distance travelled to reach the destination, the more likely the activity will be a tourism
related activity rather than simply a general leisure activity. Although the LAF is a
substantial collection of activities, it contains very few ‘tourism’ activities, as such.
Similarly, in the study by Taylor et al. (1979), the activities such as bushwalking and
camping did not require the respondent to indicate the distance travelled to participate in
the activity or the travelling time to the destination. Therefore, these studies arguably
considered Holland and leisure activities, but not Holland and tourism behaviour.

**Personality Theory and Tourism Behaviour**

Madrigal (1995) suggested that Plog (1972) was the first person to conduct research on
personality type as it applies to tourism behaviour. Plog (1974, 1990, 1991) delineated
personality types along a continuum ranging from allocentrism to psychocentrism. Ross
(1994) noted that allocentric travellers are thought to prefer exotic destinations,
unstructured vacations rather than packaged tours, and more involvement with local
cultures. Psychocentrics are thought to prefer familiar destinations, packaged tours, and
“touristy” areas. Leiper (1995) noted that Smith (1991) has argued persuasively that
Plog’s theory is defective, based on flawed research. Similarly, a study by Nickerson (1989) found that Plog’s conceptual travel model was not supported by the data. Hoxter and Lester (1988) also tested Plog’s theory. Their results were opposite to those predicted by Plog in that, although Plog asserted that psychocentrics would be nervous and inhibited, their study found that “psychocentric females may be more likely to be stable extroverts” (Hoxter and Lester 1988, p. 177). In addition, McDonnell (1994) re-tested Plog’s theory and also found that the theory was flawed. Griffith and Albanese (1996) found some support for Plog’s model. However, their respondents were a homogeneous group of undergraduate students with a modal age of 23, at the young, single stage of the family life cycle, so the study had inherent limitations. Therefore, support can be given to Leiper’s (1995) suggestion that Plog’s theory is merely a teleology, which is useful as a description, but not as an explanation.

Some authors have related personality to travel decisions. Nickerson and Ellis (1991) used Fiske and Maddi’s (1961) activation theory of personality development to develop more types of travellers. They described the personality types in terms of destination preferences, travel companions, interactions with local cultures, degree of activity participation, and other distinguishing characteristics. Ross (1994) suggested that the findings of the Nickerson and Ellis (1991) survey show that some personality theories may be useful in explaining tourism phenomena.
Holland’s Personality Theory and Tourism Behaviour

Following a literature review, the present author believes that no empirical study has specifically examined the relationship between tourism behaviour, per se, and Holland personality types. The principal objective of this thesis, therefore, was to begin the process of addressing this gap. As mentioned above, since Holland’s theory extends into environmental settings and a person’s “personality pattern determines a person’s choice of nonvocational activities and recreations” (Holland 1985a, p. 32), a logical extension of this notion would appear to be that, if a tourism attraction is perceived to have created a congruent environment for certain types of people, then people of those types will be interested in that environment. From a tourism perspective, a person's personality type may be reflected in the choice of holiday destination and the type of activities participated in during the holiday. In addition, a tourist's level of satisfaction with, and enjoyment of, his or her experience may reflect the consistency and differentiation of his or her personality type and the congruency of the environment. If personality is reflected in occupational choice, then personality may also be reflected in the type of tourism experience chosen. Tourists select holidays and activities that interest them. Thus, the destinations chosen and the types of activities participated in while on holiday may reflect a tourist's personality type. For example, a person who chooses to travel with a small group of people to museums and art galleries may be a Social/Artistic type.
In the pilot study for the present study, the author not only examined the Holland codes of university students as discussed earlier, but also tested empirically the applicability of Holland’s personality theory to tourism behaviour. To determine their preferred tourist attractions, the subjects in the pilot study were asked if they had ever visited each of a set of 30 named attractions, if they were interested in visiting the attraction in the future, and how likely they were to visit the attraction in the next 12 months (or when it was available next). The list of events included all the events that Tourism Victoria regards as Victoria’s hallmark events, whilst the list of attractions included a diverse range of tourism attractions around Victoria (Tourism Victoria 1995). Most of the attractions and events included on the list were Melbourne-based as it was seen as important that the respondents were able to relate to the items on the list.

Three ‘involved academics’ or ‘judges’ who have an understanding of the Holland types, were asked to consider the list of named attractions and to rank the three Holland environmental types which most closely characterised each named attraction. As a reminder of the Holland codes, the judges were provided with a brief table which summarised the six environmental types. To reconcile the results of the exercise, a weighting system similar to those which have been used elsewhere for processing Holland codes was applied to the judges’ scores, where 1=100, 2=50, and 3=25, suggesting that each number was “twice as influential as the succeeding one” (Kwak and Pulvino 1982, p. 232). By using this process it was possible to produce an overall, indicative Holland code for each member of the set of attractions. Respondents reported
their actual visitation to 30 named attractions on a dichotomous scale (1 = never visited; 2 = visited), and their degree of interest in visiting, and intention to visit those 30 attractions, on separate series of 1-7 scales (high scores indicated greater interest or intention). Table 3.6 lists the attractions, their Holland codes, the number of code letters in common with the dominant ‘ESC’ code of the sample respondents, and the mean values for the sample on the variables for actual visitation, interest in visiting, and intention to visit. Table 3.6 is ordered by decreasing value of the ‘visited’ variable, to illustrate the way in which the data were analysed (analogous tables for the other two variables are not shown).

The set of 30 attractions was split at the median of the ‘visited’ variable (1.13). The total number of common codes for the upper 15 attractions (for this variable, 15 out of 45 possible, that is, the maximum possible commonality was three letters per attraction) was compared with the number of common codes for the lower 15 attractions (for this variable, 17 out of 45), to see if the sample had visited more attractions with similar codes than with dissimilar codes. The result, 15:17, was marginal, so that a null hypothesis could clearly not be rejected. For the ‘interest’ variable, the ratio of more interested to less interested was 19:13, while for the ‘intention' variable, the ratio was 16:16 for the two groups. Obviously, there was little apparent relationship between code similarity and intention to visit, but there may have been some relationship between the degree of code sharing and the overall interest in visiting the attractions.
<table>
<thead>
<tr>
<th>Name of Attraction</th>
<th>Holland Code of Attraction</th>
<th>Frequency of Common Letter (ESC)</th>
<th>Visited Mean</th>
<th>Interest Mean</th>
<th>Intention Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne Moomba Festival</td>
<td>ASE</td>
<td>2</td>
<td>1.9</td>
<td>4.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Royal Agricultural Society of Victoria Show (Melbourne Show)</td>
<td>RIS</td>
<td>1</td>
<td>1.8</td>
<td>4.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Sovereign Hill, Ballarat</td>
<td>ISR</td>
<td>1</td>
<td>1.8</td>
<td>4.1</td>
<td>2.7</td>
</tr>
<tr>
<td>Penguin Parade, Phillip Island</td>
<td>IRS</td>
<td>1</td>
<td>1.7</td>
<td>4.8</td>
<td>3.3</td>
</tr>
<tr>
<td>National Gallery, Melbourne</td>
<td>AIR</td>
<td>0</td>
<td>1.7</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Puffing Billy, Belgrave</td>
<td>RIS</td>
<td>1</td>
<td>1.7</td>
<td>4.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Ford Australian Open Tennis, Melbourne</td>
<td>RSA</td>
<td>1</td>
<td>1.6</td>
<td>5.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Rialto Towers Observation Deck, Melbourne</td>
<td>IRA</td>
<td>0</td>
<td>1.4</td>
<td>5.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Parliament House, Melbourne</td>
<td>IRE</td>
<td>1</td>
<td>1.4</td>
<td>2.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Behind the scenes tour of the Melbourne Cricket Ground</td>
<td>IRC</td>
<td>1</td>
<td>1.4</td>
<td>4.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Scienceworks Museum, Melbourne</td>
<td>RIC</td>
<td>1</td>
<td>1.3</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Spring Racing Carnival</td>
<td>SEI</td>
<td>2</td>
<td>1.3</td>
<td>4.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Australian Football League Grand Final, Melbourne</td>
<td>SCI</td>
<td>2</td>
<td>1.2</td>
<td>5.3</td>
<td>3.1</td>
</tr>
<tr>
<td>International Arts Festival, Melbourne</td>
<td>ASI</td>
<td>1</td>
<td>1.2</td>
<td>4.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Backstage tour of the Victorian Arts Centre, Melbourne</td>
<td>IAR</td>
<td>0</td>
<td>1.1</td>
<td>4.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Formula One Grand Prix, Melbourne</td>
<td>RSA</td>
<td>1</td>
<td>1.1</td>
<td>4.6</td>
<td>3.2</td>
</tr>
<tr>
<td>&quot;Pick-your-own&quot; Fruit and Berry Farm, Drouin West</td>
<td>RJS</td>
<td>1</td>
<td>1.1</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Melbourne Food and Wine Festival</td>
<td>SAE</td>
<td>2</td>
<td>1.1</td>
<td>4.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Our World of Money, Craigieburn (Australian Mint)</td>
<td>REC</td>
<td>2</td>
<td>1.1</td>
<td>3.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Bells Beach Surf Classic, Bells Beach</td>
<td>SAI</td>
<td>1</td>
<td>1.1</td>
<td>4.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Tour of Western Wastewater Treatment Plant, Werribee</td>
<td>RIC</td>
<td>1</td>
<td>1.1</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Australian Motorcycle Grand Prix</td>
<td>RIS</td>
<td>1</td>
<td>1.1</td>
<td>3.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Bendigo Pottery, Bendigo</td>
<td>RJA</td>
<td>0</td>
<td>1.1</td>
<td>3.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Tour of the Australian Stock Exchange, Melbourne</td>
<td>CEI</td>
<td>2</td>
<td>1.1</td>
<td>3.4</td>
<td>2.2</td>
</tr>
<tr>
<td>De Bortoli Winery, Dioxons Creek</td>
<td>IRS</td>
<td>1</td>
<td>1.1</td>
<td>3.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Bureau of Meteorology, Melbourne</td>
<td>CIR</td>
<td>1</td>
<td>1.0</td>
<td>3.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Australian International Air Show, Avalon</td>
<td>RIA</td>
<td>0</td>
<td>1.0</td>
<td>3.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Victorian Tapestry Workshop, South Melbourne</td>
<td>AIS</td>
<td>1</td>
<td>1.0</td>
<td>2.3</td>
<td>1.7</td>
</tr>
<tr>
<td>A Commonwealth or Olympic Games</td>
<td>SIC</td>
<td>2</td>
<td>1.0</td>
<td>6.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Powerworks (Formerly tour of SEC power plant), Morwell</td>
<td>RIC</td>
<td>1</td>
<td>1.0</td>
<td>3.0</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: Author.
In order to examine the relationship between the Holland codes of individual subjects and their overall tourism behaviour, the sample was divided into two groups, the first comprising those 20 subjects with three-letter codes containing all three of E, S, and C (regardless of the order of the letters), and the second group comprising the remaining 12 subjects with at least one letter not being E, S, or C. In an attempt to provide some global indications of tourism behaviour, scores on three summate variables were computed for each respondent across the entire subsets of 30 visitation, interest, and intention variables. That is, for example, for each respondent, his or her scores on all 30 attractions were added to produce a total score on visitation across all 30 attractions. This summate score was a measure of ‘visitation activity overall’ for that person. Similarly, adding each person’s ‘interest in visiting’ scores produced an ‘interest in tourism overall’ measure, while adding the ‘planning to visit’ scores produced an ‘intention to engage in tourism overall’ measure. The three summate variables were recoded into dichotomous variables (split on median values) to enable chi-square analyses to be performed against the two-group split on Holland codes.

The results of the chi-square testing were statistically significant for actual visitation, but not for interest or intention. Those subjects with ‘all-ESC’ codes were more likely to have visited more tourism attractions than were the residual group. It is not immediately obvious why this should be so, particularly in the sense that the groups should differ on one of the summates but not on the other two.
At the level of individual respondent and individual attraction, chi-square analyses of group membership (all-ESC, or not-all-ESC) against dichotomous visitation, interest, and intention, produced very few statistically significant differences between the two groups. Regarding actual visitation, all-ESC was associated with lower visitation to Parliament and Scienceworks, and higher visitation to Puffing Billy. All-ESC was associated with higher interest in visiting the National Gallery, the Royal Show, and Moomba, but lower interest in visiting Scienceworks. All-ESC was associated with lower intention to visit the National Gallery and the Berry Farm, but higher intention to go to the AFL Grand Final.

Initially, it should be noted that, although these relationships were statistically significant (p<0.05), in the context of 30 relationships being examined in each subset of variables (for example, 30 attractions against actual visitation), the proportion of statistically significant relationships found was low (3/30; 4/30; and 3/30). This raises doubt about the underlying reality of the apparent differences, as at the 0.05 level, five per cent of the apparently significant relationships could, in fact, be spurious.

At face value, there was some support for the Holland approach in that the all-ESC subjects had both lower visitation to Scienceworks as well as lower interest in visiting it, which is consistent with the notion of an ‘incongruent’ environment not attracting particular personality types. However, Scienceworks was actually assessed as having one common code (C), as do Science courses (E). Explanation is required of the finding of high ESC interest in visiting the National Gallery, but low intention to visit. The Gallery
was coded as AIR, i.e., with no common codes with ESC. Overall, there was little consistency between the nominated codes for each attraction, and the degree of differential behaviour by the respondents.

As mentioned earlier, the results of the pilot study were not intended to be conclusive, due principally to the small sample size and its restriction to tourism management students. Rather, the results were intended to provide an indication of the usefulness of the Holland approach to the study of tourism choice behaviour. The pilot study showed that there was some support for the hypothesis, in that there were some distinctions apparent in relation to aspects of tourism choice behaviour, although the main benefit of the pilot study in this respect was to reinforce the need to adopt a multifaceted approach to behavioural assessment.

Tourism Behaviour and Demographics

Breathnach et al. (1994, p. 57) suggested that conventionally, in gender studies research, where there has been no allowance made for gender differences, this is because of a gender bias that “subsumes female behaviour into that of the dominant male pattern”. However, it is suggested that in the present study, gender, as well as other demographics should be taken into account when considering tourism choice behaviour.
In the leisure area, there has been a number of studies that have considered gender differences in leisure participation (for example, Firestone and Shelton 1994; Henderson 1994; Shaw 1994; and Jackson and Henderson 1995). However, only a small number of tourism researchers has considered gender, as a basis for segmentation, in tourism (for example, Norris and Wall 1994; Swain 1995; McGehee, Loker-Murphy and Uysal 1996). McGehee, Loker-Murphy and Uysal (1996) examined the differences in push and pull motivational factors according to gender. Push factors can be viewed as a specific component of personality but push factors are only one of an array of internal characteristics, being only a small component in the overall personality type of an individual.

Gender-based research was used when applied to business travellers (Tunstall 1989; Lutz and Ryan 1993; and McCleary, Weaver and Lan 1994) and the general conclusion of these particular studies was that there were differences in travel behaviour between males and females, but there were also many similarities. Slavik and Shaw (1996) noted that this highlighted the importance of using gender as a variable to identify not only what differences exist, but also the degree of difference.

Regarding the relationship between gender and tourism behaviour, Kinnaird and Hall (1994, p. 5) suggested that, since tourism is a process constructed out of gendered societies, “all aspects of tourism-related development and activity embody gender relations”. They suggested that women’s and men’s differential experience of various
recreational activities, and the socialisation of girls and boys to enjoy and participate in gender-specific activities, have an influence on motivation and behaviour. Kinnaird and Hall (1994) also noted that all societies, whether acting as host or guest, embody a changing set of gender perceptions, stereotypes and relations, and articulate these as part of their individual notions of "reality". This has implications for the marketing of tourism and for the motivation for the guests to visit. In the present study it is proposed that there is a relationship between an individual's personality and gender and their tourism choice behaviour. Figure 3.4 illustrates the proposed relationship between personality and gender and tourism choice behaviour.

In relation to research into the influence of stage in family life cycle in tourism choice behaviour, Hudson (1998, p. 166) noted that "the perspective of life cycle has proven to be a useful conceptual and analytical framework to investigate the experience of leisure constraints and support for strategies to alleviate them". Two researchers (Lawson 1991; and Fodness 1992) found that stage of the family life cycle was influential in travel behaviour, and other recent studies in this area considered the tourism behaviour of the over 50s (Javalgi, Thomas and Rao 1992; and Zimmer, Brayley and Searle 1995). With regard to the influence of occupations, Melamed and Meir (1981) demonstrated that people in congruent occupations see their preferred leisure activities as an extension of the kind of activities they engage in at work. The study also demonstrated that people in incongruent occupations compensate for this situation by selecting compensatory leisure activities (Holland 1985a). From a tourism choice behaviour perspective, a person's
personality type and the congruence of his or her occupation may be reflected in the choice of tourism destination and the type of activities participated in during the tourism period. For example, an office worker who has an artistic personality may be motivated to visit museums and art galleries during his or her leisure time.

Crompton 1985) found that the variables of age, gender, education, and income were poor discriminators of leisure behaviour. He suggested that because the recreation literature suggested that activity styles are driven by more than demographic variables, that “other aspects of participants of activities, or characteristic opportunities of activities, may be more useful in determining who participates in which activities”. In the present study, demographics, personality and past visitation will all be taken into account in predicting tourism choice behaviour.

The following section of this chapter offers some research propositions which attempt to apply Holland's theory of personality types to tourism behaviour. Preceding each proposition, the reader should include the caution of “Other things being equal”, for example, age, gender, ethnicity, geography, social class, physical assets or liabilities, educational level attained, and intelligence (Holland 1985a, p. 12).

Research Questions

Based on the preceding literature review, the following two research questions and two research propositions were developed:

R 1 Are industrial tourism attractions distinctly different in terms of other types of tourism attraction?
R 2 To what extent are the following useful in identifying tourism choice behaviour in relation to industrial tourism attractions:

- Holland’s personality theory?
- Demographics?
- Past visitation to named tourism attractions?

Research Propositions

P 1 Groups of visitors to certain types of tourism attraction have similar personality patterns.

As outlined above, by knowing a person's personality type it is possible to hypothesise on his or her preferred holiday destination and the types of activities participated in. Holland (1985a, p. 16) believed that “types are attracted to types”. Therefore, it is suggested that groups of people with similar personalities travel together to visit attractions, and participate in activities in which they are all interested.

P 2 When the environment at a tourism attraction resembles a certain personality pattern, it is likely to attract its associated personality type.

Holland (1985a) believed that types flourish in congruent environments and suggested that the more an environmental pattern resembles a personality pattern, the more it
attracts its associated personality type. Since a congruent environment is made up of people who have “similar interests, competencies, values, traits and perceptions” (Holland 1985a, p. 49), then a visitor to that environment is likely to be interested in the environment. If a tourism attraction has a congruent environment by allowing a certain type of person to dominate, then more of that similar type of person will be interested in the environment and is more likely to visit. Similarly, from a behavioural perspective, Holland (1985a, p. 50) suggested that the interaction of a differentiated person and a differentiated environment will be the “most predictable and intense” because a “well-defined (predictable, and therefore understandable) person is interacting with a well-defined environment that has a focused influence”.

Hypotheses

Based on the preceding literature review, research questions and research propositions, the following seven hypotheses were developed:

**H 1** Industrial tourism attractions are distinctly different in terms of other types of attractions.

**H 2** Personality (as represented by Holland codes), is related to tourism choice behaviour, as represented by:

(a) actual visitation of named tourism attractions
(b) the degree of interest in visiting named tourism attractions, and
(c) the degree of intention to visit named tourism attractions.

**H 3** Gender is related to tourism choice behaviour, as represented by:

(a) actual visitation of named tourism attractions
(b) the degree of interest in visiting named tourism attractions, and
(c) the degree of intention to visit named tourism attractions.

**H 4** There is a variation in the number of statistically significant relationships between named industrial tourism attractions and tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions
(b) the degree of interest in visiting named industrial tourism attractions,
and
(c) the degree of intention to visit named industrial tourism attractions.

**H 5** Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) and personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions
(b) the degree of interest in visiting named industrial tourism attractions,
and
(c) the degree of intention to visit named industrial tourism attractions.

**H 6**

Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) as well as personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions

(b) the degree of interest in visiting named industrial tourism attractions, and

(c) the degree of intention to visit named industrial tourism attractions.

N.B. H5 and H6 are subtly different in that H5 considers demographics and personality separately, while H6 considers demographics plus personality simultaneously.

**H 7**

For industrial tourism attractions, there is a direct relationship between actual visitation of named attractions and:

(a) the degree of interest in visiting named industrial tourism attractions, and

(b) the degree of intention to visit named industrial tourism attractions.
Conclusion

This section of Chapter Three suggests that Holland's theory of personality types can be used to explain tourism choice behaviour as it suggests that an attraction must be of personal interest to individuals and reflect their personality type before they are interested in visiting or intend to visit. As mentioned above, surprisingly few studies have considered the relationship between personality and tourism choice behaviour, and demographics and tourism choice behaviour. Further, to the knowledge of the author, there have been no studies that have considered the interactive relationship between personality, demographics, and tourism choice behaviour. The present study attempts to address that gap. Therefore, the focus of this thesis is the conceptualisation of industrial tourism and testing empirically to determine if industrial tourism attractions are perceived as being distinct from other types of attractions. The thesis also tests the applicability of one theory of personality (Holland's personality theory) to the prediction of tourism choice behaviour, and considers the potential association between demographics and personality as it relates to tourism choice behaviour.

Summary

Chapter Three provided an overview of Holland's personality theory and the application of the theory to leisure activities. The chapter demonstrated that Holland's personality theory is a highly respected theory which has high levels of reliability. Research
propositions and hypotheses were advanced which consider the relationship between tourism choice behaviour at tourism attractions and Holland’s personality theory. The next chapter in this thesis is a review of the methodology used to address the research questions and explains how the data were collected and analysed.