

## Chapter 4 – The Word Association Method – a useful tool for gathering fundamental, descriptive data

*Polling procedures as we know them today are adequate and useful for many problems. Their limitations are by now clear, however, and a trend toward intensive interviews and "open interviews" in public opinion research has been establishing itself. These techniques permit the respondent to explain fully and freely all his reasons for thinking as he does on a particular subject, but they still leave in obscurity the irrational and subconscious motivations which psychologists have found to govern much of our thinking. It is believed that word association can be used fruitfully as an aid in penetrating still further and in gaining a deeper insight into attitudes than is afforded by other opinion research techniques.*

(V.M. Vicary, 1948, p. 81)

### 4.1 Ways of gathering Stage One data

In Chapter 3, it was concluded that fresh fruits and vegetables are unique foodstuffs, and that research into fruit and vegetable knowledge structures is at an embryonic stage. It follows that it is important to obtain a relatively comprehensive body of descriptive data (Stage One of knowledge acquisition) pertaining specifically to fresh fruit and vegetables. This data can be subsequently used to drive future investigations. The present study comprises an attempt to do this.

It can be argued that the word association technique is a methodologically 'purer' research technique than is the verbal protocol, focus groups, or the various attribute-elicitation methods, as its relatively unstructured format allows access to a wide range of cognitively stored knowledge. That is, consumers are not asked to record thoughts *relating to a purchase decision*, or to pay attention to *particular product attributes*, but merely to record all thoughts and ideas that come to mind when viewing a particular object. Furthermore, the design of word association research methods is not dependent upon a set of *a priori* assumptions regarding possibly salient factors, such as 'price' or 'healthiness'. The only assumptions underlying use of the word association methods are that this is a useful way of tapping into knowledge structures, and that it is vital to use a context-free and undirected methodology to elicit basic human knowledge of any phenomenon. That is, consumers respond to a stimulus object without specific direction from the researcher regarding what types

of thoughts and ideas are being sought. It is believed that the traditional word association method presents us with the least directed research method available.

#### ***4.1.1 The Word Association Method***

From the time of Aristotle, the associative connection of ideas has been the subject of intense research interest. Bleuler emphasises the fundamental importance by stating that 'Every psychical activity rests upon the interchange of the material derived from sensation and from memory traces, upon *association*;...any psychical activity without association is unthinkable' (Bleuler, 1919, p. 1).

The importance of associations linking ideas is exemplified in Semantic Network Models (Collins & Loftus, 1975), which posit that knowledge structures are represented cognitively in a network-type system in which concepts that are related are linked. The degree of relatedness determines how closely two concepts are linked. Presumably, when an individual wishes to retrieve stored knowledge, a concept is activated, activation spreads down associated paths, and those concepts with a high degree of relatedness are activated more quickly than those with less relatedness. As concepts are located further away from the activated concept, their chances of being activated as a result of activation of the primary concept are reduced (Collins & Loftus, 1975; Anderson, 1976; cited in Reed, 1988).

The word association technique is useful in this context as the presentation of a cue (a word, or picture of an object) can act as the initial cue, thus starting the process of spreading activation. The responses given by the subject are representations of this knowledge structure. It has also been suggested (and discussed above) that the temporal ordering of responses is instructive in the sense of providing information regarding the 'layout' or 'cognitive representation' of the particular knowledge structure.

According to Szalay and Deese (de Groot, 1989, p. 824), 'word associations comprise a method of retrieving information regarding the stimulus object via links in the memory network and are relatively pure indicators of the way human knowledge is mentally represented'. Responses

obtained during a continuous (where respondents give more than one word association response to each stimulus object) word association study therefore reflect the cognitive representation of related concepts for a particular stimulus object.

The word association technique has been used in a variety of contexts since the latter part of the nineteenth century. It is thought that word association tests originated with Francis Galton in 1879, and have since been utilised in a wide variety of research settings, including interests and attitudes (Termin & Miles, 1936), language acquisition and verbal behaviour (Bastian, 1961; Entwisle, 1966; Cramer, 1970; Flekkøy, 1987; Sell, 1992; Ervin-Tripp, 1970), memory (Thomson, Meredith & Browning, 1976), demographic factors (such as age and sex) on response repetition (Pons, 1989), lexical ambiguity (French & Richards, 1992), post traumatic stress disorders (Sinnott, 1990), the hierarchical positioning of responses (Bilodeau & Howell, 1965; Keppel & Strand, 1970), grammar (Marshall & Cofer, 1970), efficiency in problem solving, cognitive processing and, not surprisingly, market research. This research emphasis has led to the compilation of word association norms for use in a variety of experimental contexts (see Postman & Keppel, 1970).

The following review of the literature demonstrates that word association tests are used in a wide variety of research contexts. If the data are analysed appropriately, and interpreted carefully, they provide valuable information regarding unconscious thoughts and feelings (Feshback & Weiner, 1986), as well as preconscious thoughts and ideas which have been shown to influence the decision process (Epstein, 1994; Fazio, 1993b; Bargh et al., 1992). It must be stated that a limitation of all research methods that rely on respondents' verbal representations of their thoughts and feelings (which includes all of the above-mentioned methodologies including the word association format) is that respondents may censor their responses before providing these to the researcher. Answers that are considered to be socially unacceptable or inappropriate might be withheld by the respondent, thus providing an incomplete record of the information contained in an individual's knowledge structure for a particular object. This particular methodological limitation has not been successfully overcome by social scientists, and must be borne in mind when interpreting the responses obtained in the present research. Having said this, perusal of the word association responses obtained in the present

research (particularly responses for bananas and carrots) shows that this phenomenon is not universal – it is clear that some individuals do not feel the need to censor responses.

Early in the 20th century, experimental research into the association of ideas, that is, the pairing of stimulus and response words, resulted in the formation of a standard experimental procedure called the Word Association Test, devised by Jung for use with psychiatric patient samples (1919). At approximately the same time, Kent and Rosanoff (1910) established the definitive experimental procedure which, while having undergone many variations in format depending upon the specific research interests of the researcher(s) (Dattore, 1985), has still largely retained its original format in most experimental formats (Isaacs & Chen, 1990).

The word association technique has been used sporadically since the earlier part of this century to investigate attitudes toward advertising (Vicary, 1948) and particular products (Steenkamp et al., 1994). However, this research technique has never been widely used as a marketing tool. This might be at least partly a result of the stereotypes surrounding the technique, which are discussed below.

Since its inception, the word association technique has been used as a means of uncovering sub- or unconscious ideas of persons considered to be suffering from mental illness. The 'abnormal' responses to stimulus words were believed to point toward the underlying cause of their particular psychopathology. In this respect, the word association technique fell under the umbrella of 'projective tests'.

#### *4.1.2 Psychoanalytic context*

In a clinical context, word association methods have primarily been used by psychoanalysts, who would wish to access the patient's unconscious wishes, motivations and conflicts (Jung, 1919). It was widely believed that popular assessment tools, such as personality tests, were inappropriate for this task. Projective methodologies, including word association techniques, were deemed to be a more useful approach in tapping unconscious thoughts and feelings. In these tests, subjects are presented with an ambiguous stimulus, and they are asked to respond freely. In this manner, psychoanalysts felt confident that, due to the ambiguity of the stimulus object, that is, it does not require a specific response, the individual would 'project' their own personality onto the stimulus. A theoretical assumption underlying this technique is that the individual reveals something about themselves through creative imagination.

Projective methods have lost a great deal of their earlier popularity, due in part to the difficulty of scoring and interpretation of the responses. Additionally, many therapists base their interpretations on theoretical or intuitive impressions of the individual's overall responses that reflect the influence of psychoanalytic concepts, and this has led to serious questions of reliability and validity (Atkinson, Atkinson, Smith, Bem & Hilgard, 1990). However, Anastasi notes that 'a procedure may prove to be practically useful or empirically valid for reasons other than those initially cited to justify its introduction' (1988, p. 595). This statement is relevant to the evolution of word association tests from their psychoanalytically-oriented, clinical origins to their contemporary use in a variety of other research settings.

#### *4.1.3 Uses in other settings*

Original clinical proponents of this technique were interested in responses considered to be abnormal, that is, responses from possibly disturbed individuals were compared with a list of word association norms derived from a sample of so-called normal individuals. However, other usages, including public opinion research, have been developed, and the emphasis in this context is upon 'normal', or 'familiar' responses (Vicary, 1948). In this context, the word association technique is a valid and reliable

method of determining the most common responses of individuals to a wide variety of phenomena.

#### *4.1.4 The word association methodology*

As stated above, Kent and Rosanoff (1910) established a word association methodology that has successfully been used in many research contexts. Essentially, a number of words are read aloud to a subject, one at a time, and the subject records the first word that comes to mind upon hearing the stimulus word. Typically, the subject is asked to respond as quickly as possible, and performance is usually timed. It was generally believed that asking respondents to answer quickly lessened the impact of conscious cognitive processes, thereby accessing less conscious cognitions (Jung, 1919). This method 'serves not only for the presentation of psychological types among normal people, but also for the diagnosis and symptomatological understanding of a whole range of psychoses' (Bleuler, 1919, p.6).

In discrete word association tests, the subject responds only once to a stimulus word. In contrast, continuous word association tests allow the subject to respond more than once. Data derived in this manner is subsequently collated and presented as frequency breakdowns of responses to a particular phenomenon. For example, to the stimulus word 'four-legged animals', the most common response might be found to be 'antelope', followed (in descending order of frequency) by bear, beaver, buffalo, camel, cow and so on (Bousfield, Cohen, Whitmarsh & Kincaid, (1961). In this manner, researchers can document the relative frequency of particular responses to a stimulus word in a sample of respondents.

While many researchers have utilised the norms and experimental procedure provided by Kent and Rosanoff (1910), several others have considered the difficulty in using norms that were established at the beginning of the twentieth century, and have provided norms with a more contemporary focus (Postman & Keppel, 1970). In a related manner, Jenkins and Russell (1960) conducted an investigation of the temporal consistency of word association norms from the years 1910–1952, concluding that responses change slowly but systematically over time. Specifically, responses with higher (frequency) ratings are most stable and

have increased in frequency during the time period studied. Additionally, abstract responses have decreased in frequency. The authors suggest three reasons for the qualitative and quantitative changes observed. Firstly, time pressure in the test situation constrains responses to superficial, popular ones. Secondly, test-wiseness of contemporary respondents leads to a similar occurrence. Thirdly, words have changed in meaning and usage over the decades. In a related manner, highly publicised events lead to the temporary popularity of some words, which will be reflected in norms collected at that time. This latter point reflects the operation of the 'availability' heuristic (Hogarth, 1980), discussed in Chapter 3.

Still other researchers have recognised the shortcomings of norms gleaned from American populations and have compiled norms using samples from Australia (Thomson et al., 1976), England (Miller, 1970), Germany (Russell, 1970), and France (Rosenzweig, 1970), to name but a few.

Methodological changes that have occurred tend to focus on allowing subjects to respond more than once to each stimulus word, as discussed earlier (Postman, 1970, cited in Postman & Keppel, 1970; Bilodeau & Howell, 1965; Siipola, Walker & Kolb, 1955; Dunn, Bliss & Siipola, 1957). Still other researchers have investigated the associations achieved when time constraints have been lifted. That is, subjects in these experiments are not asked to respond as quickly as is possible. Thus, it can be seen that the word association method has been utilised in many disparate research settings, and the data gathered therein have added substantially to our understanding of the mental representation of language. A comprehensive list of word association norms developed post-1960 has been compiled by Bradshaw (1984).

Attesting to the utility of word association methods in psychology is the contemporary use of these in many areas. A literature search of the CD ROM database 'PsycLIT' during the years 1990-1996 uncovered 125 articles dealing with word association tests. Many dealt with learning, cognition, and memory, while some considered clinical uses (schizophrenia and other disorders). Development was also addressed, as was personality and neuropsychological deficits as a result of injury or aging. Several papers discussed methodological issues. Very few papers related to the establishment of contemporary word association norms in particular areas.

#### *4.1.5 Fruit and vegetable word association norms*

The preceding discussion has demonstrated the wide use of the word association technique in obtaining norms regarding respondents' ideas/mental representations of ideas, on any phenomenon of interest. The value of this methodology in the area of consumer preferences is obvious, and yet this technique has not been systematically used in marketing. Fruit and vegetable word association norms do not exist, except for one or two fruits and vegetables that have been included in several word association norms compiled in the USA. For example, Bilodeau (1965) and Palermo & Jenkins (1964) produced word associations to the word 'cabbage'; Paivio, Yuille & Madigan (1968) produced associations to the words 'apple', 'corn', 'lemon', 'lime', 'peach', 'potato' and 'strawberry'; Jung (1919) produced associations to the words 'plum' and 'carrot', and in Australia, Thomson et al. (1976) produced associations to the words 'apple' and 'lime'.

Although there is a paucity of word associations for fruits and vegetables, one research group in the USA did, in fact, include fruits and vegetables in the compilation of word association norms using responses from the Connecticut Cultural Norms (Bousfield et al., 1961), for responses to category names (Marshall & Cofer, 1970). Specifically, single associations to 16 fruit products and 17 vegetable products (these products were associations which were originally generated for category names in the study by Cohen, Bousfield & Whitmarsh, 1957), were recorded. Whilst this study is the only word association research discovered that has included fruit and vegetable products as stimulus material, it differs from the present study in several respects.

In Marshall and Cofer's study (1970), single-response free word associations were obtained whereas, in the present study, participants were asked to generate up to ten associations to each fruit and vegetable product. This procedure was utilised in the present study in order to gain a broader range of associations to each product, thus enabling the researcher to: (a) obtain several descriptors of each product, which might enable the author to more fully understand the manner in which various fruits and vegetables are perceived, and (b) determine the hierarchical ordering of word associations. That is to say, to categorise the associations into primary



and secondary responses, thereby allowing the author to discover both general descriptors, on the one hand, and those associations, on the other, which describe the object at progressively finer levels of discrimination.

Secondly, the sample used in the study by Marshall and Cofer (1970) was from the United States. Whilst there are bound to be similarities of response from American and Australian populations, events of significance in one country might be reflected in word association norms but not necessarily show in the responses obtained in another country. Jenkins & Russell (1960) point toward the need for culture-specific norms to be established. With respect to the present research, if conclusions drawn are to be considered valid, data must be obtained from the same population whose decision-making behaviour one is trying to understand.

Thirdly and, in a related manner, the study by Marshall and Cofer (1970) (along with most of the word association norms currently published) was conducted over thirty years ago. Hence, it seemed desirable and very necessary to establish a more recent set of word association norms. In light of the changes (economic, gender issues, multiculturalism, for example) that have occurred in Western society over the last (three) decades, which have been considerable, and have had an overwhelming impact on the choices that are made both by individuals and groups of all types, it would seem to be less useful to continue to use word association norms established during the 1950 – 1960 period to explain contemporary behaviour. It is therefore concluded that the fruit and vegetable word association norms obtained by Marshall and Cofer (1970) are somewhat dated and culture-specific, and are of limited usefulness in Australian research. Rather, it was considered necessary to develop contemporary word association norms that related to the specific sample being used.

#### *4.1.6 Word association methods in marketing*

In the context of marketing research, word association, or free-response methodologies are useful in gathering fundamental, descriptive data regarding product attributes deemed to be significant by consumers (Green et al., 1973; Steenkamp et al., 1994). Variants of the typical word association methodology have been used for quite some time, in order to elicit attributes that consumers deem important in any given product, from processed meats to shampoos (e.g., see Steenkamp et al., Feb, 1994; Green et al., 1973, Vicary, 1948).

However, it would appear that a pure free-response format is not followed in many of these studies. Rather, factors of proposed salience (called attributes) are predetermined by the researcher and are freely responded to by consumers (Steenkamp et al., 1994). This is called the compositional method. Alternatively, in decompositional methods, consumers judge several brands in terms of features of similarity. The information derived in this manner is contextually limited, in that consumers are directed towards particular areas of knowledge, at the expense of other knowledge. Thus, free-response methods used in many marketing research studies do not provide comprehensive Stage One (Simple Apprehension) information on consumers' knowledge structures relating to fruits and vegetables.

Despite the methodological problems identified in the above-mentioned marketing studies, in terms of consumer preferences, the word association method is a potentially valuable source of information in relation to various products, as this methodology provides a unique way of investigating just how consumers perceive and evaluate these objects. As discussed, a context-free word association methodology, with a procedure based upon the original Kent and Rosanoff (1910) method is appropriate in this context. A discussion of the precise specifications of the methodology designed for the present study is located in the Methods section (Chapter 6).

#### *4.1.7 An example of word association methods used previously to capture cognitive structure*

Kanwar et al. (1975) conducted investigations relating to the nutritional awareness of primary food purchasers and meal preparers. They were interested in developing 'a clearly conceptualised model of cognitive structure and a set of reliable and valid indicators of the major components of that model' (p. 122). Kanwar et al.'s research is of interest in the present context for several reasons: (a) the parallels between their theory of knowledge acquisition and the one espoused here, and (b) their choice of methodology in eliciting knowledge structures.

Based on the work of cognitive style researchers, Kanwar et al. posited a particular cognitive structure. They identified major behavioural patterns that previous researchers had suggested were important in this context, and attempted to describe cognitive structures that would produce such behaviours. These structures were then defined conceptually as Dimensionality, Articulation and Abstraction (Kanwar et al., 1975).

Dimensionality is defined as 'the number of salient, activateable concepts stored in memory' (Kanwar et al., 1975, p. 123). In this respect, attention is placed upon the number of concepts in memory 'associated with a particular content domain'. Articulation is defined as 'the number of category representations or levels for each salient dimension in memory' (p. 123). That is, the ability to make progressively finer distinctions between stimulus objects on the basis of those dimensions. It should be noted that the theory of Kanwar et al. has obvious parallels to the theory of knowledge acquisition presented in Chapter 2.

The third dimension, abstraction, refers to a 'recoding process in which a new code is assigned to represent several other usually less abstract or more concrete codes'. The ability to abstract lessens the amount of cognitive energy needed, as larger amounts of information can be stored using fewer, more abstract codes. Abstraction bears a resemblance to the processes posited to occur in Stage Three (Reasoning) of the above-mentioned theory of knowledge acquisition.

Kanwar et al. (1975) suggest that these three dimensions of stored knowledge influence the manner in which an individual processes

information concerning that particular domain. They further suggest that measuring these dimensions provides the researcher with scores on constructs believed to comprise operationalisations of the cognitive concepts believed to represent cognitive knowledge structures. Dimensionality was measured by adding the number of unique concepts elicited, and abstractness was measured by judging the relative abstractness or concreteness of the concept.

Kanwar et al. considered the use of the word association technique to be an appropriate way of tapping cognitive structures. This echoes the thoughts of researchers dating back to the start of this century (Szalay & Deese, cited in de Groot, 1989). Kanwar et al. used the word association method to tap their dimensionality construct. That is, the total number of unique concepts generated were considered to represent the dimensionality of each subject's knowledge structures. This is similar to the method used by de Groot (1989) to measure the number of links departing from a concept node to others. It has been stated that 'the more links there are branching out from a concept node to other concept nodes, the less activation each individual link receives after activation of the "source" node and the more difficult it is to retrieve information along each of these links' (de Groot, p. 824). Kanwar et al. then measured domain-specific knowledge by administering a knowledge test where questions regarding the domain were asked. They subsequently analysed the data for convergent validity on the each of the measures they used (which included a word association test, repertory grid method and knowledge test). Reasonable levels of convergent validity were obtained.

Kanwar et al. (1975) appear to be unique in their use of the pure word association technique in a marketing context. As discussed above, marketing researchers have utilised free-response methods to elicit consumer product information, however, these tools invariably introduce context effects, which inhibits knowledge structure elicitation.

Secondly, and as discussed earlier, the model of cognitive knowledge structures posited by Kanwar et al. (1975) parallels that espoused in the present thesis. It would appear, therefore, that some marketing theorists are aware of the importance of tapping aspects of knowledge structure and, furthermore, use a traditional and widely accepted theory of knowledge acquisition in their work.

To summarise, Kanwar et al. (1975) have used a context-free, non-directed methodology to elicit consumers' cognitive structures, and reasonable convergent validity between this and other, more traditional methodologies (knowledge tests and a repertory grid procedure) was reasonable. This research, when combined with previous findings that posit the word association method as a valid method of eliciting consumer knowledge structures, has important implications for research in the marketing domain. That is, the word association method is useful for eliciting cognitively-stored knowledge, including information from each of the knowledge areas posited by Epstein (1991, 1994), Loewenstein (1990), Jaynes (1990), and Damasio (1994).

#### **4.2 Linking attributes and consumer knowledge structures**

At this point it is relevant to link the notions of consumer knowledge structures with the marketing term 'attributes'. In this regard, the work of Green et al. (1973) is a useful source. The authors posit that the *identification of key product attributes*, which comprise a set of cues used by the consumer in the purchase decision (Cox, 1962, cited in Pay et al., 1996) is a necessary prerequisite to using behavioural and/or economic decision models to investigate consumer preferences (Green et al., 1973). It can be seen that this definition relates specifically to the purchase context. In marketing theory, generally speaking, attributes are typically defined as qualities of the object that consumers use in the purchase decision. For example, attributes of apples might include colour, texture and nutritional value. However, for the purposes of the present research, the term 'attributes' is defined as ideas regarding the product, that is, concepts making up a knowledge structure for a particular product. This is in keeping with the theme of the thesis, which is that, in the initial stages of research, knowledge structures of products should be determined without introducing contextual limitations, such as focussing on the purchasing environment. Hence, the term 'attribute' is defined thus: 'the characteristics or features that an object may or may not have' (Mowen, 1993, p. 771).

If attributes are defined in this more general sense, it will be possible to analyse the word association responses gathered in the present study in such a way as to identify categories, or semantic clusters of responses that can subsequently be thought of as object attributes. According to Tom et al. (1987), 'marketers must first identify the important attributes that consumers desire in a product or service and then design the critical cue(s) to communicate these desired characteristics to the consumers' (p. 11). It is then possible, in future research, to determine the relative importance of these attributes in the purchase decision. For example, if the words 'colour', 'taste', and 'price' appear frequently in the word associations obtained in the present study, these can thus be termed 'attributes', and the relative importance of these three attributes can be investigated in subsequent studies.

#### **4.3 A 'quasi-deductive research method is used in the present research**

In fact, a quasi-deductive research method was utilised in the present thesis in order to move the research base along the spectrum from a purely inductive method (providing descriptive, fundamental data) towards more deductive research methods. To explain, the fundamental, descriptive data obtained in the present research (using an inductive research method) was used to cast light on existing cognitive and personality theory. That is, word association responses were, in the first instance, placed into categories. An analysis of these categorical configurations was then undertaken with a view to determining the congruence of the material with existing consumer theory (a quasi-hypothesis testing phase of research). This subject is discussed in detail in the next chapter.

To elaborate briefly, however, thus far, the discussion has focussed on the lack of traditional marketing research *methodologies* that would appear to be appropriate to use at the first stage of research. Recall that the context effects and existence of *a priori* assumptions relating to proposed attributes of importance were a major shortcoming of many of these methodologies. However, in the discussion relating to the present research, congruent marketing *theory* has not yet been addressed. It is parsimonious to extrapolate existing theory to the present context if appropriate, rather than to begin theory building from scratch. Therefore, is there any research that

can be linked to the present study which will enable the scope of the research to be broadened from obtaining descriptive information to hypothesising relationships?

Before moving on to a discussion of contemporary psychological and marketing theory that is relevant to fresh fruit and vegetable perception and choice, a brief summary of Chapter 4 is provided. In Chapter 4, the word association method was introduced as a non-directed and useful way of gathering fundamental, descriptive data. The history of the word association method was briefly described, as was the fact that this particular research methodology has been used in a wide variety of academic contexts. The specific format of the original word association method was described, and changes in the methodology used by different researchers were discussed. The fruit and vegetable word association norms that were provided by Marshall and Cofer (1970) were described, and a discussion followed relating to their lack of usefulness for the present research. A (rare) example of the word association method being used to capture cognitive knowledge structures was also provided.

The discussion then moved toward terminological issues, and it was suggested that the definition of the term attributes can be broadened in order to organise the data from the present word association study into a list of attributes that collectively comprise a consumer knowledge structure for each of the ten fruits and ten vegetables studied in the present thesis. Finally, it was proposed that information contained within the consumer knowledge structures obtained in the present research could be used to shed light on areas of contemporary psychological and marketing theory, thus moving the research toward a 'quasi-deductive' format. In conclusion, it is worthwhile to repeat the question raised at the end of this chapter, namely: is there any research that can be linked to the present study which will enable the scope of the research to be broadened from obtaining descriptive information to hypothesising relationships?

## Chapter 5 -- The role of self-monitoring in fresh fruit and vegetable research

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*Most people assume that each of us has one and only one true self, but this is not always so. Some people act as if they have not one, but many selves..... The public appearances created by a person's words and deeds may be the result of deliberate attempts to create images appropriate to particular circumstances in an attempt to be "the right person in the right place at the right time".*

(M. Snyder, 1987, p. 4)

### 5.1 The psychological construct of self-monitoring

Chapter 4 concluded with a question relating to the congruence of contemporary consumer decision theory with the objectives of the present research. Specifically, it was asked: is there any research that can be linked to the present study which will enable the scope of the research to be broadened from obtaining descriptive information to hypothesising relationships?

A search of existing psychological theory uncovered the personality construct of self-monitoring, first introduced by Snyder (1974), which has been consistently related to consumer behaviour. Self-monitoring theory is potentially instructive when investigating consumer attention to particular product attributes. Snyder has suggested that, within the context of self-presentation, there may be individual differences in the extent to which our public appearances and private realities of the self concur (1974) and that, furthermore, this tendency is manifested behaviourally in selective attention to particular product attributes. That is, Snyder posits that, when evaluating products individuals differing in self-monitoring propensity selectively attend to certain characteristics of products.

Snyder argued that the population, generally speaking, can be divided into two groups: high self-monitors (HSM), who use the behaviour of others as guides to how they should conduct themselves, and low self-monitors (LSM), who use their inner beliefs, values, attitudes and other personal attributes as guides to behaviour.



It has been suggested that HSM are particularly concerned with the image of themselves that they present to others, and tend to use situational and interpersonal specifications to ascertain how they should behave in given situations. They might therefore adopt different behaviours for different situations, depending upon the social cues evident in each context. Research findings tend to support this idea, with HSM showing marked changes in behaviour, relative to situational cues of appropriateness (Snyder, 1991).

In contrast to this, LSM tend to use their own values, beliefs and attitudes as guides for behaviour, and place considerably less emphasis on situational cues. They are not concerned with altering their behaviour to 'fit in' to any given situation. That is, they are concerned to act in accordance with their inner beliefs and dispositions, and will therefore show situation-to-situation consistency in behaviour. These individuals show strong consistency between inner states and behaviour, and research findings have tended to support this claim (see Snyder, 1987, for a review).

The practical implications of this notion are widespread, and research has identified differences in self-monitoring behaviour in a wide variety of settings, such as choosing activity partners, initiation of personal and dating relationships, communication ability and attitudes towards clothing (Snyder, Gangestad & Simpson, 1983; Snyder, Berscheid & Glick, 1985; Snyder & Simpson, 1984; Caldwell & O'Reilly, 1982; Sypher & Sypher, 1983; Anderson & Thacker, 1985; Garland & Beard, 1979; Snyder, Berscheid & Matwychuk, 1988; Snyder, 1987).

Self-monitoring behaviour also affects career decisions. HSM have been found to be successful in boundary-spanning roles, which involve working with a variety of groups, each quite distinct from the others (Caldwell & O'Reilly, 1982). In addition, HSM and LSM tend to differ with respect to the amount of knowledge they require regarding how to act in a social setting (Snyder & Gangestad, 1982), and in their respective representativeness in managerial/supervisory (so-called 'prestige') roles (Sypher & Sypher, 1983; Anderson & Thacker, 1985). Other areas of career-related behaviour in which self-monitoring propensity is indicated includes leadership behaviour (Garland & Beard, 1979) and personnel selection (Snyder et al., 1985).

## 5.2 Self-monitoring and consumer behaviour

More pertinent to the present research are the numerous studies reporting a relationship between self-monitoring and consumer behaviour. Snyder suggests that LSM will focus on quality-based characteristics in order to express inner values and attitudes. HSM, on the other hand, wishing to present a particular image to others, will focus on image-related product characteristics when evaluating a product. In other words, LSM will choose consumer items based upon purported quality characteristics inherent in these products, while HSM will focus on image, or value-expressive characteristics when evaluating consumer items.

According to Snyder and DeBono (1985):

*because of their concerns with being the right person in the right place at the right time, these high self-monitoring individuals ought to be very sensitive to the images of self that they project in social situations,..... and, as such, they may be especially attentive to and influenced by advertising messages that can vary information about the images that they acquire and project by virtue of using particular consumer products. In other words, to the extent that an advertisement allows high self-monitoring individuals to perceive that a given product has the potential to be used to create or enhance an image, they should react favourably to it..... By contrast, low self-monitoring individuals typically do not attempt to mold their behaviour to fit situational and interpersonal considerations. Instead, these individuals tend to guide their behavioural choices on the basis of information from relevant inner sources, such as attitudes, feelings and dispositions..... Unlike their high self-monitoring counterparts, low self-monitoring individuals are less concerned with the images they project to others in social situations; instead, they are more concerned that their behaviour in social contexts be an accurate reflection of their underlying attitudes, values and dispositions. As such, they may be particularly responsive to advertisements that feature appeals to a product's quality.*

(Snyder & DeBono, 1985, p. 588)

Research findings have tended to support this notion, demonstrating at least a moderate relation between self-monitoring style and differential attention to product characteristics. For example, Snyder and others have found that advertisements that are image-oriented are rated more highly by HSM than LSM, and that advertisements that focus on the quality, or utilitarianism (utility) of the product are rated more highly by LSM than by HSM (DeBono & Packer, 1991; Snyder & DeBono, 1985). Additionally it has

been found that advertisements delivered by sources differing in image versus quality characteristics (i.e., the image source was either physically attractive or unattractive, and the quality source was either an expert or a non-expert) have differential effects on LSM and HSM, with LSM concentrating on messages delivered by experts (quality cues) and HSM concentrating on advertisements delivered by a physically attractive source (image-based cues) (DeBono & Harnish, 1988, DeBono & Telesca, 1990).

DeBono and Rubin (1995) have found that, when evaluating cheeses, HSM use 'country of origin' (a so-called image variable for cheeses) as an evaluative tool, rating cheeses from France as tasting better than cheeses from other places, whereas LSM used the actual taste of the cheese to determine the relative tastiness of various cheeses. This finding is significant in extrapolating the well-established self-monitoring effect for advertisements of products to evaluations of actual products; that is, most of the above-mentioned self-monitoring studies dealing with consumer products have tested the relative effectiveness of image versus quality-based *advertisements* on individuals differing in self-monitoring propensity. DeBono and Rubin have shown that this effect holds when individuals are evaluating *actual products*, as opposed to advertisements for products.

DeBono and Snyder (1989) have suggested that this self-monitoring effect might be explicable in terms of HSM choosing to use characteristics relating to the product's 'form' and 'appearance' (p. 418) when evaluating decisions about quality, whereas LSM might selectively attend to 'function', and 'performance' characteristics when evaluating products. The results of a study involving advertisements of cars differing in form and function provided partial support for this contention, with HSM rating the 'sporty' car as being of higher quality than the standard car. However, LSM rated the standard car as being of higher quality, even in the absence of information differentiating between the two cars in terms of functional characteristics (mileage, handling, and so on). This latter effect was unexpected, in that the experimenters predicted that the LSM would rate the sporty car as being of higher quality if the advertisement included information suggesting above-average performance characteristics. The authors suggested that LSM might be cautious about any attractive looking object, 'perhaps believing that an attractive exterior may be hiding inner deficiencies' (p. 423).

These findings, taken together, would appear to support the notion that HSM and LSM focus on different product characteristics when evaluating products, and advertisements for products.

Johar and Sirgy (1991), Shavitt (1992) and Shavitt et al. (1992) have expanded on self-monitoring theory as it relates to consumer behaviour, stating that self-monitoring influences product evaluation in particular ways. These ideas are discussed below.

### **5.3 Linking self-monitoring with traditional marketing research**

A brief digression is necessary here to tie together the various strands of the argument, including advertising strategies, image- and quality-based product attributes, and self-monitoring style.

With regard to product advertisements, it is widely held that two primary strategies are adopted by marketers: the 'hard sell' and the 'soft sell' (DeBono & Packer, 1991). These two types of advertisements highlight images, and quality or functional performance of products, respectively. Advertisements using the 'hard sell' approach tend to emphasise the image a consumer may project by using a given product. For example, within the realm of automobiles, an advertisement may stress the sporty and attractive features of a car, which are said to be image-based attributes, whereas another advertisement might dwell on performance, or quality-based characteristics of the product, such as fuel economy, inexpensive engine maintenance, and so on.

### **5.4 Attitude functions as an explanation for consumer motivations**

Marketers have suggested that the two advertising strategies mentioned in the previous paragraph lead to persuasion by tapping into consumer attitudes. Specifically, that attitudes serve four functions, two of which concern the *utilitarian* and *value expressive* motivations of consumers (Katz, 1960; DeBono & Snyder, 1989; DeBono & Telesca, 1990; Johar & Sirgy, 1991). It is believed that image- and performance-based advertisements allow the consumer to maintain both 'self-' and 'functional-congruity', respectively (Johar & Sirgy, 1991). Value-expressive (or image-based)

advertising appeals seek to create a particular image of the consumer who uses the product. This enables the consumer to 'experience a match between the user image characteristics of the product and the consumer's self-concept (self-congruity)', the result being persuasion.

Conversely, utilitarian (or quality/functional/performance-based) advertising appeals seek to highlight the functional features of the product. This leads to 'a match between the functional characteristics of the product and their desired set of characteristics expected in that product (functional congruity)' (Johar & Sirgy, 1991, p. 31). This is also said to lead to persuasion.

An obvious parallel exists between self-monitoring theory (Snyder, 1974), on the one hand, and attitude-product congruency theory (Johar & Sirgy, 1991), on the other. Snyder's self-monitoring theory (1974), and Johar and Sirgy's attitude-product congruency theory (1991) are based upon the notion of the self. Both Snyder (1991) and Johar and Sirgy (1991) rely on Katz's (1960) theory of attitude functions to explain why individuals attend to either form or function characteristics of a product in an evaluative context. That is, each of these theories is based on the notion that image-based characteristics, or the form and quality-based attributes, or the function of products are key attributes in the consumer decision process, and that individuals will attend differentially to these cues in an attempt to reach attitudinal goals. However, Snyder (1987) uses self-monitoring as the primary concept influencing product evaluation, suggesting in fact that individuals differ with regard to the image they wish to present to others, and that a manifestation of this is the differential attention given to image (form) or quality (functionality) characteristics.

Johar and Sirgy (1991), on the other hand, suggest that the main issue is the psychological dynamics (self-congruity versus functional congruity) involved in value-expressive (image) versus utilitarian (quality) advertising appeals, and that self-monitoring is only one variable that influences this relationship. Johar and Sirgy (1991) suggest that there is a variety of other situational and individual difference factors to be considered in this context, including product differentiation, product life-cycle, product scarcity, product conspicuousness, consumer involvement, and consumer prior knowledge

An important consideration relating to these arguments is the terms that are used by the various researchers in the area. Snyder (1974) links together 'LSM', 'product function', and 'product quality', on the one hand, and 'HSM', 'image' and 'form/appearance', on the other. The terms linked together by Johar and Sirgy (1991) and Shavitt et al. (1992) are 'LSM', 'quality-based advertisements', and 'utilitarianism', on the one hand, and 'HSM', 'image-based advertisements', and 'social identity' (sometimes referred to as 'value-expressiveness'). It is not clear, however, that these terms can be used interchangeably, and this difficulty with terminology is proposed (by the present author) as one explanation for the lack of consistently strong findings of a relation between self-monitoring propensity and attention to product attributes. Before this issue is explored in more depth, however, two related issues must be addressed. The first relates to the notion of some marketing researchers (Johar & Sirgy, 1991; Shavitt, 1992; Shavitt et al., 1992) that a variable that possibly intervenes in the relation between self-monitoring propensity and attention to product attributes is *the functional nature of the product itself*. This notion has important implications for future research into self-monitoring and product attributes, and must therefore be dealt with in a detailed manner. The second issue relates to the tendency for studies in this field to obtain 'moderate' (Zuckerman et al., 1938) findings. These two matters will be addressed directly below.

### 5.5 Product functionality as a variable moderating the relationship between self-monitoring propensity and attention to product attributes

Importantly, Johar and Sirgy (1991), Shavitt (1992) and Shavitt et al. (1992) further suggest that the extent of the value-expressiveness and utilitarianism of a given product will influence the effectiveness of each of these appeals. In line with Snyder (1987), these authors tend to place much emphasis on the role of self-monitoring when discussing consumer behaviour, but, in addition, they suggest intervening variables. In essence, they state that differences in the utilitarianism or value-expressiveness of a particular product might mediate the self-monitoring effect. That is, in a task involving listing of product attributes that, in a general sense, individuals would list utilitarian features of products as being relevant, since 'all products have features relevant to quality (e.g., durability, workmanship)' Shavitt et al., 1992, p. 342), but for products having a high value-expressiveness, that HSM should show increased attention to image-based product characteristics.

The studies by Shavitt et al. (1992) provide some evidence in support of the claim that product function moderates the self-monitoring effect. When a product is generally considered to have both social identity and utilitarian functions, HSM choose social terms to advertise the product, whereas LSM choose utilitarian terms. However, when a product is considered to have primarily social-identity functions, both LSM and HSM tended to concentrate on social identity attributes of products, and when the product has primarily utilitarian functions, both HSM and LSM tend to focus more on utilitarian ideas.

Furthermore, in a study wherein LSM and HSM explained their attitudes toward particular products, it was found that a self-monitoring effect occurred (that is, HSM using social terms to describe a product and LSM using utilitarian terms to describe this same product) only for a product with *primarily social identity functions*. Whereas, for utilitarian and multiple function products, both HSM and LSM used utilitarian terms when explaining their attitude toward these products. This finding runs counter to predictions. It is the case, therefore, that the findings of Shavitt et al. (1992) provide only partial support for the notion that product function mediates the self-monitoring effect. It must be stated that, although several of the findings of Shavitt et al. (1992) did not reach

statistical significance, their findings, when taken together, provide some support for the tendency of product function to moderate the relationship between self-monitoring and selective attention to product attributes.

In summary, then, there seems to be some agreement on the notion that self-monitoring is related to consumers' differential attention to image (which, as discussed above, has also been termed 'value-expressiveness', or 'form') and quality (which, as also discussed above, has also been called 'utilitarianism', or 'function') product characteristics. This theory is supported by empirical findings, which appear to be reasonably robust over a number of settings. According to Shavitt et al. (1992, p. 339), 'the impressive consistency in these results suggests that self-monitoring is tapping a fundamental difference in the motives that individuals associate with products'. Furthermore, Shavitt et al. (1992) and Johar and Sirgy (1991) posit an intervening variable, which involves intrinsic characteristics of a particular type of product that enable classification in terms of the attitude function it serves for the individual. This contention has some research support from several studies conducted by Shavitt et al. (1992). The implications of the work of Shavitt et al. (1992) are as follows: product function must be measured before predictions can be made regarding a self-monitoring effect. Therefore, for fresh fruits and vegetables, which are the products focussed upon in the present research, the issue of primary- versus multiple-product functions must be addressed before discussing potential self-monitoring effects. The implication of this notion for the present study will be addressed later.

### **5.6 Strength of relationship between self-monitoring and selective attention to product attributes**

With respect to the present discussion on self-monitoring, it is the case that many of the findings relating self-monitoring and consumer behaviour are moderate (Zuckerman, Gioioso & Tellini, 1988). That is to say, the findings of a relationship between self-monitoring and product characteristics have not been consistently strong. Careful analysis of the findings of several of these studies revealed that the strongest results were obtained when the relation between self-monitoring and the terms 'image' and 'quality' were investigated (DeBono & Rubin, 1995; Snyder & DeBono, 1985; DeBono & Packer, 1991), although it is the case that the



findings of DeBono and Packer (1991) were mixed, with some findings not reaching significance.

As discussed earlier, DeBono and Snyder (1989) found a partial link between self-monitoring and 'form' and 'function', with HSM rating a physically attractive car as being of higher quality than a less attractive car ( $p < .01$ ). However, the prediction that LSM would find the car with information relating to enhanced quality more attractive than the car with no quality information was not borne out. Rather, LSM found the least attractive car to be of higher quality, regardless of quality information. Finally, the results of Shavitt et al. (1992), who investigated self-monitoring and 'utilitarianism' and 'social identity', were also mixed (it should be noted, however, that these non-significant findings did tend to assume a pattern that would be predicted by the authors).

Despite the lack of consistently strong results in the investigation of self-monitoring and product attributes, the findings of some sort of reliable relationship in disparate areas of consumer behaviour point towards a cogent phenomenon. That is, researchers in both marketing and psychology have consistently found a link between self-monitoring and attention to product attributes. One explanation for the 'moderate' (Zuckerman et al., 1988) findings obtained in some self-monitoring studies relates to terminology used by different theorists. This idea will now be explored in more detail.

### ***5.6.1 Validity of conceptual link between self-monitoring behaviour and product attributes***

With respect to the notion of categorisation of these terms, a possibly troubling aspect of these theories is the equivalence in meaning given to the various terms used to describe image- and quality-based characteristics of products. As discussed above, Snyder (1987) equates the term 'image' with the form, or exterior of a product, and the term 'quality' with the function, or performance of a product. These two terms are also linked conceptually with the 'hard-' and 'soft-sell' product advertisements (Snyder, 1987, 1991; Johar & Sirgy, 1991; DeBono & Packer, 1991), and with the terms 'utilitarian' and 'value-expressive' functions of attitude (Johar & Sirgy, 1991; DeBono & Telesca, 1990; Shavitt et al., 1992; Shavitt, 1992).

It can be seen easily that some self-monitoring researchers choose to investigate the relationship between self-monitoring and social identity versus utilitarianism (Johar & Si'gy, 1991 Shavitt et al., 1992), whereas others choose to label social identity and utilitarianism image and quality (DeBono & Rubin, 1995, Snyder & DeBono, 1985, DeBono & Telesca, 1990, although DeBono and Telesca use the term value-expressive, rather than utilitarianism). Still others label the categories of social identity and utilitarianism as form and function (DeBono & Snyder, 1989, Lammers, 1990).

To elaborate, various researchers tie these concepts together slightly differently<sup>4</sup>. For example, in his seminal work on the topic, Snyder (1987) states that:

*some products ..... may contribute primarily to exterior appearances and public images. As such, the natural target population of advertising for such products may be high self-monitoring consumers, who may look to advertising when choosing products for image-making purposes. By contrast, other products (such as a nutritious breakfast cereal) may contribute primarily to interior well being. For these products, the natural target population may be low self-monitoring consumers, who may look to advertising when choosing products for the intrinsic functions they perform.*

(Snyder, 1987, p.105)

and (referring here to LSM):

*their concern with being faithful to their personal standards and principles may account for their preference for consumer products whose advertising stresses the actual functional qualities of the products rather than the images associated with them.*

(Snyder, 1991, p.42)

Here, Snyder draws a relation between HSM, image, and exterior appearance, on the one hand, and LSM and intrinsic functions of products. These ideas are echoed in the next quote, which follows on from a discussion in which Snyder clearly links the 'soft' sell advertisement with an image orientation, and the 'hard' sell approach with claims about quality. He states that:

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<sup>4</sup> Several direct quotes from self-monitoring authors are presented in the following discussion. While the number of quotes might seem excessive it seemed important to directly quote the authors on the critical issue of terminology, so as not to misrepresent their ideas.

*these preferences for different styles of advertising may translate into actual patterns of consumer purchases. Thus, HSM may purchase a car that looks flashy and sporty rather than a better-handling sports car and may drink an imported premium beer that gives a special status to its drinker rather than a cheaper domestic beer that tastes the same. Likewise, LSM may eat the most nutritious breakfast cereal even though there isn't a star athlete on the box and may purchase the most energy-efficient refrigerator even though it doesn't have a designer-styled finish.*

(Snyder, 1991, p.47)

In the above quote, Snyder again links HSM with appearances of cars, on the one hand, and LSM with nutritious (quality) breakfast cereal. The inference is that HSM tend to focus on the exteriors of products, which provide cues relating to image, and that LSM are more concerned with product quality, or function. Zuckerman et al. (1988) explain image and quality advertisements as follows:

*an image approach to advertising focuses on the image or implications associated with the use of the product; the quality of the product is not mentioned. For example, an image oriented strategy would (a) glamorise the people using the product – a Marlboro man is described as rugged and masculine; or (b) describe desirable by-products of using the product – appreciation of friends, moving up, being stared at, etc. By contrast, a quality approach to advertising focuses on the value of the product. For example, practitioners of this approach would emphasise how well a car drives, how good a food tastes, or how enchanting the smell of a perfume is.*

(Zuckerman et al., 1988, p. 91)

Jones (1994) echoes Snyder's (1987) relation between HSM and image-oriented advertisements, and provides a more direct link between LSM, inner states, and quality based advertising that emphasises intrinsic rewards associated with products:

*because high self-monitoring individuals tend to be acutely sensitive to the image they project to others, they tend to be more responsive to image-oriented ads that emphasise the extrinsic rewards associated with a product (e.g., prestige). Low self-monitoring individuals are less concerned with situational and interpersonal considerations, and they accord greater weight to inner states (e.g., attitudes and*

*dispositions). Thus these individuals are more responsive to quality-based advertising that emphasises the intrinsic rewards associated with the product.*

(Jones, 1994, p. 160)

In another article, DeBono and Snyder (1989) clearly link HSM with a product's image-enhancing qualities, and suggest image is manifested in a product's form and appearance. In addition, they state that LSM act on the basis of relevant inner sources such as attitudes, feelings, and dispositions, and suggest that this tendency manifests in responsiveness to cues relating to functions and performance of the product:

*Snyder and De Bono (1985, 1987) have provided converging evidence that HSM are particularly responsive to advertisements that highlight the images associated with products. Because of their concern with the image-enhancing qualities of products, HSM may be especially likely to use information about a product's form and appearance when making decisions about its quality. Thus, they may perceive a sporty-looking automobile to be of a higher quality than its boxy counterpart.*

*By contrast, LSM typically do not attempt to mold their behaviour to fit situational and interpersonal considerations of appropriateness (Snyder & Monson, 1975). Rather, these people tend to guide their behavioural choices on the basis of information from relevant inner sources such as attitudes, feelings, and dispositions. As a result, LSM typically display substantial correspondence between their attitudes and behaviour (Snyder & Swann, 1976, Zanna, Olson & Fazio, 1980). In addition, these strivings for consistency manifest themselves in reactions to advertising appeals. Specifically, Snyder and DeBono (1985, 1987) have demonstrated that LSM are particularly responsive to advertisements that feature information about product quality. Given their concerns with the quality of advertised products, LSM may be especially likely to use information about the functions and performance of a product when deciding its quality.*

(DeBono & Snyder, 1989, p. 418)

Shavitt et al. (1992) also attest to the relationship between HSM and image, on the one hand, and LSM and product qualities, on the other:

*in the context of consumer products, low self-monitors are concerned with dimensions related to product quality, such as the taste of whiskey, the cleaning performance of shampoo, or the sound quality of audiocassettes. Thus, quality-based advertisements, ones that focus on the inherent qualities and benefits of the product, are particularly effective for low self-monitors. In contrast, high self-monitors are concerned with the self-presentational significance of products, such as the image associated with using or serving whiskey. Thus, image-based*

*advertisements, ones that focus on the impressions created by using the product, tend to be especially effective for high self-monitors (DeBono & Packer, 1991; Snyder & DeBono, 1985, 1987)*

(Shavitt et al., 1992, p. 338)

Finally, Shavitt et al. (1992) then link LSM with utilitarian attitude functions and HSM with social identity attitude functions:

*functional theories propose that attitudes serve important psychological functions for individuals, and that attitudes can be classified according to the functions they meet (Katz, 1960; Kelman, 1958, 1961; Smith, Bruner, & White, 1956). Two functional categories in particular seem relevant to the motives that distinguish low versus high self-monitors; product attitudes: utilitarian and social identity functions.*

(Shavitt et al., 1992, p. 339)

It is not immediately apparent, however, from the above quotes that each of these terms ('form', 'image', 'social identity' and 'value-expressiveness', on the one hand, and 'function', 'quality', and 'utilitarianism', on the other hand) are, in fact, interchangeable. That is, there does not appear to have been a research focus on testing the assumption that the various terms used by self-monitoring theorists to refer to the product characteristics are transposable.

Having said this, the conceptual link between image and form could be argued to be intuitively sensible—that is, that image-based appeals might extend to characteristics of a product relating to its form, or exterior. For example, DeBono and Telesca (1990) state that:

*'an important manifestation of the social adjustive nature of their attitudes is the emphasis HSM impart to physical attractiveness. In particular, studies of interpersonal relationships and the psychology of advertising have demonstrated that, for HSM, the physical attractiveness of entities ranging from dating partners to consumer products is quite important and engaging'.*

(DeBono & Telesca, 1990, p. 1384)

This notion might provide some intuitive support for the conceptual link between HSM, 'image-based' self-presentation style and product attributes salient to its form, or physical appearance. However, intuition is not sufficient, in this instance. A firm empirical link between the 'image' of a product, and its appearance must be established in order to confidently claim a relation between the two.

In a similar sense, to state that the quality of a product is manifested in product characteristics dealing with its functionality, or performance, is problematic although this link, too, might make intuitive sense. That is, consumers might determine products' relative quality on the basis of how well each product serves a particular function. However, again intuition is not sufficient. The question remains: how is it possible to link together the notions of LSM needing to act in accordance with their inner values, attitudes and beliefs, on the one hand, and the product characteristics that signal quality, utilitarianism, or functionality? Similarly, how can HSM's need to present a particular public image be tied to product characteristics dealing with image, social-identity, or form? In fact, as the above quotes demonstrate, researchers appear to be unable to provide a clear conceptual link between these two terms.

As discussed above, the inability to (as yet) provide a clear conceptual link between the above-mentioned terms weakens the conception of the relation between self-monitoring and consumer behaviour. The fact that the various terms used to describe HSM and LSM selective attention to particular product characteristics might not be equivalent in meaning, might go some way toward explaining the low to moderate effects found between self-monitoring style and particular attributes of a product. For example, Zuckerman et al. (1988) provide a brief review of research relating to the relation between self-monitoring and image preference, and conclude that this relation is moderate.

It might be the case that the behavioural, or product attribute manifestations of the concepts of image and quality have not been sufficiently honed. That is, researchers might not yet be aware of just how HSM behaviour reflects image-orientation, and what product attributes reflect the LSM emphasis on inner values, beliefs and attitudes.

However, because research findings have been generally supportive of this conception concerning self-monitoring and product attributes, demonstrating at least a moderate relation (Snyder, 1991), it is suggested that the proposed consumer-related behavioural implications of the self-monitoring theory may be justified, but that they may require fine-tuning. That is, it might be the case that, because of the different functions attitudes serve for LSM, on the one hand, and HSM, on the other, that

these two groups attend to qualitatively distinct product characteristics. However, the nature of these differences requires more precise, or specific definitions.

To summarise, it would appear that various theorists are converging on a model of consumer behaviour, the primary variables of which are self-monitoring, and attributes relating to image and quality/form and function/ social identity/value-expressiveness. Consequently, in addition to the primary aim of the present study, which is to obtain fundamental, descriptive data relating to fruit and vegetable consumption, an investigation of the concept of self-monitoring, as it relates to consumer behaviour, is undertaken.

Specifically, the present study seeks to investigate the concepts of image and quality/form and function/ social identity/value-expressiveness, and their relation to self-monitoring, using a methodology that has previously been found to be useful in identifying attributes, or characteristics, that are perceived to be salient to a given object (Monk, 1983). The methodology used in the present research is similar to that used by Monk (1983), Shavitt et al. (1992) and Milgate (1994), in utilising an open-ended, free-response-type method to elicit attitude-type responses.

It must also be stated that, given the definitional problems associated with the terms function/quality/utilitarianism and their link to LSM, and the terms image/social identity/value-expressiveness/form and their link to HSM, specific predictions will not be made in this regard. Rather, and as discussed above, an effort is made to grapple with fine-tuning these terms. In this respect, the sample is divided into LSM and HSM, and the categories of responses presented in the first part of the study, as relatively comprehensive knowledge structures of the 10 fruits and 10 vegetables, are analysed for qualitative differences as a function of self-monitoring tendencies. That is, consumer knowledge structures for particular fruits and vegetables were analysed to identify possible qualitative differences in word association responses (that is differential category representation for LSM and HSM responses) as a function of self-monitoring. Any qualitative differences in word association responses found for LSM, on the one hand, and HSM, on the other, were compared with the categories used in the self-monitoring literature, including 'image/social identity/value expressiveness/form', and

'function/quality/utilitarianism'. In this manner, more specific definitions of the categories of concepts used by LSM and HSM in evaluating products were provided.

### **5.7 Categorisation of fresh produce: analysis of word association responses**

A useful finding resulting from the work of Shavitt et al. (1992) is in the area of product categorisation, and this is directly relevant to the methodology used in the present study, which provides much descriptive data that must subsequently be sorted, or categorised, to provide information regarding salient product attributes. As stated above, the work of Johar and Sirgy (1991) and Shavitt et al. (1992) suggest that the relation between self-monitoring and consumer behaviour is mediated by product functionality. That is, that if a product is primarily value-expressive, that image-based responses would occur, but for products serving a utilitarian function, that quality-based responses would occur. This leads to the necessity of categorising products into functional groups. Shavitt et al. have provided several studies in which they have attempted to do just this, and their results support their typology. They divide products into one of three groups: utilitarian, social identity (value-expressive), and multiple functions (both utilitarian and social identity functions).

Using Shavitt et al.'s (1992) categorisation system, it is suggested that fruits and vegetables fall primarily into the utilitarian function category. Fresh produce serves an intrinsic reward/punishment function. That is, there are intrinsic rewards (better health) and punishments (allergies, perceived toxicity of chemical sprays) associated with this behaviour. However, also due to the increased public awareness of the benefits of fresh produce consumption (including advertisements wherein famous personalities support consumption of these products), it might be argued that purchase of these products could also serve a social identity, or value-expressive function. That is, individuals with shopping trolleys (at the supermarket), fruit bowls (in the home) and/or school lunches overflowing with fresh produce, might consider themselves to be presenting a positive image to others.



It is therefore suggested that fresh produce fills a primarily utilitarian function, but that it might also be considered to comprise, to a lesser extent, a value-expressive function. Following from this, and based upon previous research, reviewed above, the following suggestion is postulated: that the multiple-functional nature of fresh fruits and vegetables will lead to a self-monitoring effect, in line with the ideas of Shavitt et al. (1992). That is, given that fresh fruits and vegetables are likely to serve multiple functions for consumers, LSM and HSM will show definite differences in attention to particular product characteristics. However, earlier discussion relating to the difficulties inherent in the terminology used by self-monitoring theorists must be borne in mind in this regard, and it is therefore suggested that the terms utilitarian, social identity (value-expressive), and multiple functions, and their relation to self-monitoring have not been firmly established, and that any findings from the present research might reflect these difficulties. Consideration of these difficulties must temper any interpretation of the present findings.

The self-monitoring theory has widespread implications for the marketing of products. Evidence suggesting that the world is divided into two classes (Snyder, 1987), the low and high self-monitor, and that these individuals evaluate products primarily on the basis of either image- or quality-related product attributes, would herald a breakthrough in the understanding of consumer behaviour. Not least because marketing researchers have, for many years, posited the existence of two distinct (and widely used) forms of product advertisement: the 'hard' and the 'soft' sell (DeBono & Packer, 1991), which relate, respectively, to quality- and image-based product attributes.

To summarise Chapter 5, the psychological construct of self-monitoring has been investigated in the context of many psychological phenomena, including marketing research. Research has consistently shown a relationship between self-monitoring propensity and attention to particular product attributes. However, it was noted that some of these findings have been moderate, and it was suggested that these moderate findings might be explicable at least partially in terms of difficulties in the terminology used by various researchers in this field. It was further suggested that the word association data obtained in the present research could be analysed in an attempt to provide more finely-tuned definitions of terms used by self-monitoring theorists when referring to the tendency

for those differing in their self-monitoring propensities to attend to particular product characteristics .

## Chapter 6 -- Methodological Issues

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### On analysing large quantities of qualitative data:

*"Qualitative Data as an Attractive Nuisance: The Problem of Analysis"*

M.B. Miles, 1982, title of a book chapter

### 6.1 Overview of thesis thus far

As discussed in detail in earlier chapters of this thesis, several objectives of the present research were put forward. Specifically, the word association data obtained in the present studies were ordered and categorised in such a way as to comprise relatively comprehensive knowledge structures for 10 fruits and 10 vegetables that are the objects of interest in the present thesis. The fundamental, descriptive data contained in these knowledge structures is of interest to future researchers of fresh fruit and vegetable preferences, as they provide empirical evidence relating to attributes that are uppermost in consumers' minds while freely associating to these products. That is, attributes that are deemed in future investigations of fresh fruit and vegetable preferences to be salient to consumers can be based upon pre-existing empirical data (the systemic networks derived from word association responses in the present study) demonstrating their relative importance to consumers.

A second objective (of the present thesis) relates to the cognitive organisation of consumer knowledge structures of fresh fruits and vegetables. In Chapter 3, a detailed discussion of the cognitive organisation of knowledge structures and the contributions of analytical and intuitive reasoning processes to decision making was put forward. The utility of being cognisant of Hammond's Cognitive Continuum (1996) and contemporary ideas on multiple-processing cognitive systems was emphasised. Furthermore, it has been suggested by previous researchers that different modes of stimulus presentation lead to differential access to qualitatively-distinct cognitive repositories of knowledge relating to particular objects, and that these repositories 'may be relevant to a distinction between experiential and rational processing systems' (Epstein,

1994, p. 712). It was deemed desirable to analyse word association responses obtained in the present study using different modes of stimulus presentation to test the above assumption. Specifically, word association responses obtained using seven different modes of stimulus presentation, would be compared in order to test for qualitative differences in response; the existence of which would provide support for multiple-coding theories which would in turn, draw attention to the shortcomings of assuming unitary cognitive systems.

A final objective of the present thesis relates to the psychological construct of self-monitoring (Snyder, 1974). In the present chapter, an argument was postulated that individuals differing in their self-monitoring propensity tend to evaluate products using specific cues, or product attributes. It was also noted that definitions used to distinguish the categories of attributes attended to by LSM and HSM were problematic, and that clearer definitions were required. Consequently, the word association responses of LSM and HSM were categorised, and these categories of responses were compared with those used in the self-monitoring literature, in order to shed light on whether the existing categories are able to be used interchangeably.

The above discussion highlights the multi-faceted nature of the present study. For purposes of clarity, each of the above three aspects of the study, namely: (a) gathering fundamental, descriptive data on 10 fruits and 10 vegetables, (b) investigating multiple-processing cognitive systems, and (c) the influence of self-monitoring on consumer preferences, are discussed separately in the results chapter (Chapter 7) and the discussion chapter (Chapter 8). However, and as should be clear from Chapters 1 through 5, the various strands of the argument adopted in the present thesis are related in an important way. That is, if an Aristotelian view of knowledge acquisition is followed, it is the case that the three aspects of the present thesis assume a natural progression.

To elaborate briefly, according to the Aristotelian view, knowledge relating to a particular phenomenon follows a typical course, with the gathering of fundamental, descriptive data (aspect (a) discussed above) leading to a reasoning process, which moves us beyond what is known to the unknown (aspects (b) and (c) discussed above, which are related to the influence of cognitive information processing and self-monitoring on consumer behaviour). That is to say, we infer the existence of the unknown (the influence of stimulus modality and self-monitoring on

consumer behaviour) from what we do know (as evidenced in the acquisition of fundamental, descriptive data) about the object (Spangler, 1986).

The various elements of the present thesis, therefore, are linked theoretically, and the General Discussion (located in Chapter 8) focuses upon bringing the various aspects of the thesis together to form a coherent whole.

## **6.2 The utility of the word association method in identifying attributes salient to an object**

Qualitative data of the volume produced in the present study can appear to be unwieldy in the sense that a huge amount of information (in the form of words, phrases and sentences) is obtained. Moreover, because of its qualitative nature, the number of tests of statistical significance that can be used is limited. Statistical analyses are typically limited to frequency breakdowns and trends evident in pictorial representations of the data. However, Bliss et al. (1983) have developed a way of codifying the data which makes the data amenable to statistical testing. Monk (1983) has used a Systemic Network Analysis methodology to investigate childrens' attitudes towards their peers in a classroom setting. He used a free-response method to gather fundamental data, and sorted and analysed these data using the network analysis method. From this, he was able to provide detailed explanations regarding the factors that influence childrens' attitudes toward their peers, and was also able to perform statistical (quantitative) analyses to test the strength of these findings. A similar methodology was utilised in the present study, in order to elicit subjects' knowledge structures of fresh fruits and vegetables.

A critical component of Monk's method (1983) is in the establishment of categories into which the free-response data can be inserted. In the present study, a categorisation scheme was developed which achieved high levels of inter-rater consistency (see Methods section in Chapter 6 for a detailed account of consistency issues). The categories suggested themselves from the data, however some categories were identified from previous theory (the categories used in the present research are discussed in some detail in a later section of the thesis).

It is important to note that Monk utilised a system of categorising responses, first, in global categories (these 'naturally' appear in the data). The global categories provide information that only discriminates among responses according to membership in a particular global category. He then broke these global categories down into further categories, continuing this procedure until he reached a logical set of terminal, or end categories for each global category. Data from the present study were analysed at a preliminary, descriptive level and from this, frequency breakdowns were developed. Inspection of these showed that the data tended naturally to fall into particular categories (see Chapter 7 for an example of a complete network developed with data from the present thesis). These were *sense*, *function*, *horticulture*, *taste*, *evaluation*, *economics*, and *idiosyncratic*. These global categories paralleled those attributes found by Milgate (1994) to be commonly associated with pineapples (e.g., taste, preparation, ripeness, appearance, uses). These preliminary categories were formalised by positioning them in an hierarchical model (Monk, 1983), and defining each carefully. Four judges were then asked to categorise each of the responses thus, and inter-rater consistency was substantial.

As one works one's way down to the terminal categories, one is provided with increasingly specific and detailed information on object attributes that are deemed to be important. For example, the sense category was subsequently distilled into the finer categories of 'taste', 'feel', 'odour', and so on. These categories were then distilled into more discriminating categories. For example, taste was divided into 'taste – positive', 'taste – negative', and 'taste – neutral'. These terminal categories provided information on whether the categorised 'taste' response was affectively laden, and in what direction. The progression from global to terminal category was therefore: *sense* – 'form' – 'taste' – 'positive'/'negative'/'neutral'.

A full description of the categorisation of responses from the present study is located in Chapter 7. This categorisation system provides insight into the construction of global and terminal categories. Specific details of the procedure used for the present study are provided in the *Methods* section of this report.

### 6.3 General overview of methodological issues

As has been stated earlier, a word association study is undertaken in the present thesis in order to provide fundamental, descriptive data comprising knowledge structures of various fruits and vegetables. It was deemed necessary to design a methodology that was relatively unstructured so that a broad array of information that was not context-specific could be garnered. Additionally, specific investigations of contemporary cognitive theory, which took the form of analysing word association responses obtained using particular stimuli modalities, and the role of self-monitoring, which took the form of analysing the word associations of both LSM and HSM for qualitative differences were undertaken. To this end, the methodology used in the present thesis involved several tasks. Briefly, respondents freely associated to pictures (and/or words) of ten fruits and ten vegetables. Up to ten responses for each stimulus object were allowed. The respondents then rated each of the fruits and vegetables on a favourability scale. This provided an index of the relative likeability of each product. This was followed by a nine-item demographic questionnaire, which asked for information relating to sex, age, marital status, and so on. Finally, respondents filled in the 18-item Self-monitoring Scale developed by Snyder (1987).

A preliminary study was undertaken to identify the ten fruits and ten vegetables that are most commonly consumed by the majority of Australians. This provided a feasible number of fruits and vegetables to study, and also allowed for a test of the accuracy of consumer perceptions. Details of this study appear in the next section of the thesis.

The word association study was piloted using a pencil and paper format. The ten fruits and ten vegetables identified in the preliminary study as being the most commonly consumed in Australia were used as stimulus objects. Unnamed and named colour photographs, line drawings, black and white photographs, and pieces of paper with the name of a particular fruit or vegetable were used as stimuli. In all, seven modes of stimulus presentation were used. A particular respondent saw fruits and vegetables in only one modality; that is, Respondent Number One saw all named colour photographs, Respondent Number Two saw all black and white photos, Respondent Number Three saw all named colour photos, and so on. The format of the pilot study was exactly the same as that used in the

main study; that is, respondents completed the word association study, provided favourability ratings for each fruit and vegetable, filled out the demographic survey and finally filled out the Self-monitoring Questionnaire. Ordering of stimulus objects was counterbalanced across respondents.

After the pilot study was completed, a computer version<sup>5</sup> of the same study was designed. Respondents sat in front of a computer screen with a keyboard, and were guided through each of the tasks by instructions on the screen. The experimenter was in the same room to assist with any difficulties that arose. As well as informing the respondents that instructions would appear on the screen, the experimenter explained the procedure to respondents verbally. They were told that five practice trials (for the word association part of the study) would precede the actual study, so that they could familiarise themselves with the computer. Respondents were urged to ask the experimenter for assistance if in doubt about any part of the procedure.

## 6.4 Methods

### 6.4.1 Preliminary Commonality Study

#### Introduction

A preliminary commonality study was undertaken in order to identify fresh fruits and vegetables that were perceived, by the majority of Australians, to be the most commonly consumed. The term 'commonality' was chosen because, from a respondent's point of view, this term seemed to capture the essence of the meaning of the phrase 'commonly consumed'. Following this, the major word association study was undertaken.

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<sup>5</sup> The notion of creating a computer-driven word association study was described by Isaacs and Chen (1990), who used this type of methodology to determine the relative effects of the absence–presence of an observer on the nature of word association responses obtained. These authors used a computer program to obtain word association responses and basic demographic information from respondents. The author of the present research used a modified version of this idea in the present study. Dr Isaacs kindly sent (the author) a copy of his word association program which was used for comparative purposes.



As discussed above, whilst the end result of many areas of research is the provision of a 'complete picture', a full understanding of the phenomenon in question, pragmatics must act to guide the researcher in their choice of research focus. As stated, the research into fruit and vegetable consumption patterns in Australia is in its infancy and, at this stage of the process, gaining a complete understanding of the factors that govern fruit and vegetable choice is unrealistic. Rather, researchers must 'start at the start', and build a solid foundation of descriptive data that will form the basis of subsequent investigations.

For this reason, it is impractical to include all fruits and vegetables currently available to the Australian public in the present investigations. It is the case that the diversity of fruits and vegetables readily available to most Australians is considerable and is increasing rapidly. This is at least partially explicable in terms of an upsurge in technology regarding genetic engineering techniques, and an increase in technology regarding storage and transportation of fresh produce, which increases the availability of many products considered to be novel to the Australian diet. For example, many types of vegetables of Asian origin (Bok Choy, and so on) are now a common feature of most Australian fresh produce outlets. Similarly, it is quite common to see, amongst our nationally grown fruits and vegetables, those imported from many regions globally (Californian navels, New Zealand avocados, and so on).

Despite the fact that there is a wide diversity of fruits and vegetables readily available to the consumer, and that this necessarily impacts upon the complexity of the decision-making processes regarding choice of these products, it is also the case that a relatively smaller number of fruits and vegetables are staples of the Australian diet, and it is these products which are the primary focus of the decision-making process, as these products are purchased on a regular basis. It would therefore seem practical to confine initial investigations to the fruits and vegetables that comprise staples of the Australian diet.

A necessary first step was to identify the fruits and vegetables that were most commonly consumed by the majority of Australians. Both subjective and objective indices of the relative commonality of various fresh fruits and vegetables were obtained for the following reason: it is well documented that individuals behave in accordance with their perceptions,

rather than objective reality. It was therefore considered important to discern the ten fruits and ten vegetables that consumers believed were most commonly consumed, as it is the vegetables and fruits that consumers consider to be common, rather than those that actually are common, that would be interesting for the purposes of investigating fresh fruit and vegetable perceptions in the present research.

Objective indices of fresh fruit and vegetable consumption were obtained in order to test the accuracy of consumers' perceptions regarding fresh produce commonality; as discussed by Hammond (1996), research on perceptual accuracy has traditionally been neglected because of the research focus on discovering human perceptual errors. The present study afforded an opportunity to test human judgement in the context of fresh fruit and vegetable consumption. The results of this preliminary study also provided the author with a feasible and realistic number of fruits and vegetables to investigate systematically and comprehensively in subsequent investigations.

### **Methods**

The study was conducted over a ten-week period from mid-April until the end of June, 1993. Seasonal variations in availability of various fruits and vegetables may influence consumer perceptions, and this should be borne in mind when interpreting the findings.

### **Procedure**

93 females and 62 males agreed to participate in the study. The sample consisted of students and academics, teachers, primary caregivers, staff from kindergartens, and members of the general public. Participants were informed that they would be asked to rate exhaustive lists of fruits and vegetables lists in terms of commonality, and to subsequently fill in a brief questionnaire (an instruction sheet and lists of fruits and vegetables used in the present study appear in Appendix 1). Participants were asked to read through each list, one at a time (ordering of the lists was counterbalanced), and to indicate the fruit (or vegetable) that they 'considered to be the most

commonly consumed by the majority of individuals in Australia'. Participants indicated their choice by placing the number '1' in the space

provided alongside the given fruit. The second most common fruit was identified by placing the number '2' in the space provided next to the fruit. Participants continued on in this manner until they had indicated **ten** fruits that they considered to be the most common.

After completing the ratings, participants filled in a brief demographic questionnaire (located in Appendix 2) which included items relating to sex, age, occupation, income, country of birth, residence, usual place of purchase of fruit and vegetables, and number of individuals in the household.

## **Results**

The ten most commonly consumed fruits and vegetables were identified by reversing the rating given for each product by each subject (a rating of one was subsequently scored as ten, two was scored as nine, three as eight, and so on) and this transformed score was multiplied by the number of times it was rated by the sample. This provided overall ratings for each product. Higher scores indicate that the fruit or vegetable was perceived to be more commonly consumed. The ten fruits and ten vegetables with the highest overall ratings were thus chosen as the most commonly consumed by the majority of individuals in Australia.

These overall ratings were then placed in descending order of magnitude to provide a measure of the relative commonality of each fruit or vegetable. These findings are presented in Table 1, and are summarised below.

**Table 6.1:** *Fruits and vegetables found to be most commonly consumed by sample of respondents used in the present study.*

Fruit*	Vegetable
apples (9.7)**	potatoes (9.7)
oranges (8.7)	carrots (6.6)
bananas (8)	tomatoes (6.2)
grapes (5.1)	pumpkin (6)
pears (5.1)	onions (5.8)
peaches (4.3)	peas (6.1)
pineapples (4.2)	beans (5.6)
watermelon (4)	lettuce (5.3)
lemons (4.3)	cauliflower (4)
strawberries (4.1)	broccoli (3.4)

\* Fruits and vegetables are listed in descending order of commonality. For example, apples were considered to be the most commonly consumed fruit (out of 10), whereas strawberries were considered to be the least most commonly consumed fruit (out of 10).

\*\* Numbers in brackets are commonality ratings (out of ten) for each fruit and vegetable. For example, in terms of the ten most commonly consumed fruits, apples were considered to be most commonly consumed (9.7), whereas strawberries were considered to be least commonly consumed (4.1).

As Table 6.1 indicates, the ten fruits perceived by the sample to be the most commonly consumed were: apples, oranges, bananas, grapes, pears, peaches, pineapples, watermelon, lemons and strawberries. The ten vegetables were: potatoes, carrots, tomatoes, pumpkin, onions, peas, lettuce, beans, cauliflower and broccoli

These findings were subsequently contrasted with two independent measures of fruit and vegetable consumption in Australia: the Australian Bureau of Statistics (ABS) Consumer Price Index Market Basket Survey (March, 1994), and the Consumer Study of the Fruit and Vegetable Market (CSFVM) (1990).

Regarding the ABS survey, three criteria must be met for any fruit or vegetable to be included in the ABS Market Basket. The fruit or vegetable must account for a significant amount of expenditure by metropolitan wage and salary earners. Secondly, the ABS must be able to obtain reliable

(regular) prices for these items across Australia. Finally, the products included in the Market Basket must be of reasonably consistent quality.

Table 6.2 shows that a total of fourteen fruits were included in the 1994 ABS Market Basket. These were: oranges, apples, bananas, pears, pineapples, peaches, plums, grapes, strawberries, grapefruit, mandarins and watermelon, kiwifruit and rockmelon. A comparison of these findings with those of the present study indicate that only one fruit, lemons, was identified by respondents in the present study as being perceived to be most commonly consumed by the majority of Australians but was not included in the ABS Market Basket.

**Table 6.2:** *Fruits and vegetables found to be most commonly consumed using Australian Bureau of Statistics (ABS) Consumer Price Index Market Basket Survey (March, 1994).*

Fruit	Vegetables
oranges	potatoes
apples	beans
bananas	carrots
pears	cabbages
pineapples	lettuce
peaches	tomatoes
plums	pumpkin
grapes	onions
strawberries	cauliflower
grapefruit	mushrooms
mandarins	capsicum
watermelon	broccoli
kiwifruit	celery
rockmelon	

Thirteen vegetables were included in the ABS Market Basket (March, 1994), including: potatoes, beans, carrots, cabbages, lettuce, tomatoes, pumpkin, onions, cauliflower, mushrooms, capsicum, broccoli and celery. Again, these findings correspond closely with those of the present study, with only one vegetable, peas, being identified by respondents in the

present study as being perceived to be most commonly consumed by the majority of Australians but not being included in the ABS Market Basket.

The findings of the present study were then contrasted with those of the CSFVM (1990). As stated in Chapter 2, the latter study was conducted by the Horticultural Research and Development Corporation, and involved 1,954 face-to-face interviews with householders from all capital cities of Australia. These interviews were conducted in May/June 1990, and were restricted to those individuals over 18 years of age who are primarily responsible for the purchase of fruit and vegetables for the household. Table 6.3 presents the findings of the CSFVM study.

**Table 6.3:** *Fruits and vegetables found to be most commonly consumed using Consumer Study of the Fruit and Vegetable Market (CSFVM) (1990).*

<b>Fruit</b>	<b>Vegetables</b>
Apples (94%)*	Potatoes (94%)
Bananas (92%)	Carrots (92%)
Oranges (87%)	Tomatoes (91%)
Grapes (76%)	Onions (89)
Strawberries (72%)	Lettuce (88%)
Pears (70%)	Pumpkin (82%)
Rockmelon (65%)	Cauliflower (80%)
Peaches (65%)	Cabbage (75%)
Watermelon (61%)	Celery (74%)
Mandarins (59%)	Broccoli (73%)

\*percentages indicate the percentage of the sample who stated that they consumed these products.

As was the case regarding the AES data, when these results are contrasted with those of the present study, the data correspond closely. Only two fruits (pineapples and lemons) and two vegetables (peas and beans) were identified by our sample as being perceived to be most commonly consumed by the majority of Australians, but were not included in the findings of the Horticultural Research and Development Corporation (1990) study.

Inspection of the data also indicates that, regarding the CSFVM (1990) survey, the relative percentages of individuals who consumed each product are highly congruent with the commonality ratings provided by our sample for the first six fruits and vegetables. That is to say, there appeared to be strong consensus between the two studies regarding the serial positions of the first six fruits and vegetables. Apples, oranges, bananas, grapes and pears, and potatoes, carrots, tomatoes, pumpkin and onions occupied primary positions in both studies. Unfortunately, this comparison was not able to be conducted using the ABS (1994) data, as the fruits and vegetables contained in the Market Basket are not ordered internally according to any pattern of regularity of consumption or amount consumed.

In summary, the results of the present study, when contrasted with two independent measures of fruit and vegetable consumption patterns, strongly indicate that the perceptions of a sample of Australian residents regarding which fruits and vegetables are most commonly consumed by the majority of individuals in Australia are highly congruent with more objectively-derived indices of this phenomenon.

## **Discussion**

The results of the present study are valuable in two respects. Firstly, they have provided (the author with) a feasible number of fruits and vegetables to investigate in subsequent studies. As discussed in the introduction to this report, the diversity of fruits and vegetables readily available to most Australians is considerable, and is increasing rapidly. The present investigation has provided us with a list of ten fruits and ten vegetables that comprise staples of the Australian diet.

These findings are particularly valuable in the context of smaller, independent retailing environments where it is not feasible to offer a wide range of fruits and vegetables for sale. Due to the perishable nature of fresh fruits and vegetables, the smaller retailer is forced to limit the choice of fresh produce that is offered to the consumer, and to therefore supply only those products that are frequently purchased, in order to ensure that freshness is guaranteed. The results of the present study offer the smaller retailer a guide which, if followed, should ensure that the customer is offered a range of goods that will, in all likelihood, be purchased by many customers.

The findings of the present study are important in another respect. The results indicated that the individuals in our sample demonstrated a high degree of perceptual accuracy regarding actual fruit and vegetable consumption patterns. Comparison with other (objective) indices of consumer consumption of fruits and vegetables show similar results (Australian Bureau of Statistics, 1994; Lewis, 1994; Dowling, 1994; Rob Mason, pers. comm., 1995). Whilst this ability may seem to be intuitively obvious, it is, nevertheless, imperative that intuitions such as these are subjected to empirical evaluation, in order to test these assumptions in an appropriate manner. Hammond (1996) discusses the paucity of research attention paid to the accuracy of social perception. He suggests that social psychologists have traditionally focussed predominantly on perceptual errors (such as self-serving bias and correspondence bias) to the detriment of accuracy of social perception, and that this over focus has misled us as to the accuracy of social judgement. In short, many psychologists believe that our perceptual judgements are inherently faulty and that a move toward a more objective, rational form of decision making is thus warranted. However, work by Hammond and others (1996) demonstrates the opposite: human judgements correspond accurately with empirical events when the task to be performed relies on environmental cues of high reliability and high predictability of the environmental target system.

Hammond urges more research on the accuracy of human judgement, and the present study afforded an opportunity to measure the accuracy of consumers' perception of the relative commonality of various fresh fruits and vegetables. It can be concluded that the results of the present study demonstrate that, in accordance with Hammond's ideas, within the realm of fruit and vegetable consumption patterns, consumers possess a high



degree of accuracy concerning the types of product that form a staple part of the Australian diet.

To summarise, the preliminary study provided a list of ten fruits and ten vegetables that were, both objectively and subjectively, measured to be the most commonly consumed by the majority of Australians. The ten fruits were: apples, oranges, bananas, grapes, pears, peaches, pineapples, watermelon, lemons and strawberries. The ten vegetables were: potatoes, carrots, tomatoes, pumpkin, onions, peas, lettuce, beans, cauliflower and broccoli. These fruits and vegetables were used in the word association studies, which are described below.

#### 6.4.2 Word Association Studies

##### Subjects

A total of 337 subjects participated in the study (219 females, 117 males). These subjects were placed into four age groups: 17–24; 25–39; 40–54; 55+. 23.7% were in the 17–24 age group, 40.1% were in the 25–39 age group, 23.7% were in the 40–54 age group, and 12.2% of subjects fell into the 55+ age group. 50.1% of subjects were married (or lived with partners), while 49.9% were single. Two-thirds of the sample stated that they always, or nearly always both shopped for and cooked their meals.

Seventy of these subjects participated in the pilot study (paper and pencil format), the remainder participating in the main (computer-driven) study. In order to test the practical implications of the self-monitoring theory on a more representative sample of individuals than those used in many studies (university students), an attempt was made to find subjects in a variety of settings (see procedure for more detail).

##### Procedure

As stated above, the main word association study was piloted with 70 subjects, using a pencil and paper format. Folders of photographs<sup>6</sup>

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<sup>6</sup> Each of the three examiners of this thesis have received a sample of the stimulus materials used in the present study. These have been included to provide examiners with examples of the types of stimulus materials used in the present study.

were used instead of computer-presented images, and paper and pencil-type instructions and word association booklets, favourability ratings, demographics and self-monitoring questionnaires were completed (samples of stimulus materials used in the piloted word association study appear in Appendices 3, 4, 5, 6, and 7).

Respondents were approached in places such as the university cafeteria, daycare centres and kindergartens, libraries, downtown cafes, parks, and office buildings. Every effort was made to ensure a representative sampling of the Armidale population. To this end, ABS Census Data (1991) were used to identify relative numbers of individuals in each of Armidale's subgroups. Indigenous and non-indigenous Australians, members of the international community, adults of various age groups, males and females of varying marital status and with or without dependents, and members of each of the employment categories listed in the ABS Census Data were sampled.

Respondents were asked if they would be interested in participating in a 'consumer perception' study. They were informed that the study would take between 20 minutes – one-half hour, and were informed that names and other identifying information would not be recorded, thus assuring anonymity (Ethical Clearance Forms are located in Appendix 8). Respondents were told that they would be asked to look at several pictures with/without accompanying names (of the object pictured), and to write down any thoughts or ideas that came to mind while viewing the pictures. They were also informed that the word association study would be followed with several brief questionnaires (a demographics questionnaire, favourability ratings and a self-monitoring questionnaire).

If respondents agreed to participate, they were seated comfortably at a table and given the instruction sheet and answer booklet (Appendix 4). As can be seen from a perusal of the instruction sheet, respondents were not provided with specific instructions relating to the purposes of the study. That is, both the methodology used and the instructions for respondents were brief and did not introduce any contextual information. When the respondents signalled readiness to continue, they were given a folder of stimulus objects, and an answer booklet.

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Copies of the answer sheets are included in Appendix 4. Separate pages in the answer booklets were provided for up to ten word association responses to each fruit and vegetable. That is, when the respondent had completed the responses for the first stimulus object (say, a colour photo of an apple) they were instructed to turn the page to write down associations to the next stimulus object (say, a colour photo of a pumpkin).

Immediately prior to beginning the study, respondents were told that they could feel free to write down any thoughts and ideas that came into their minds while they looked at the pictures. They were assured that there were no right and wrong answers, and that any ideas they might provide would be useful. At the completion of the study, respondents were thanked for their participation, and were given a contact phone number if they wished to be apprised of the results of the overall study subsequently.

### **Computer Driven Word Association Study**

For the main, computer driven study, subjects were again approached in a variety of settings (university campus, shopping mall, play groups and kindergartens, public library, and so on) and asked to participate in a consumer-oriented study. Once again, ABS Census data were used to find a representative sample of respondents. At this early stage of the study, respondents were given only very general information about the study. They were told that it involved looking at pictures and/or words naming fresh produce, and typing into the computer any ideas that came to mind while viewing the pictures/words. They were informed that they could respond as many times as they wished (to each stimulus object), and detailed instruction screens appeared at appropriate stages throughout the study, which told subjects how to use the computer.

Subjects sat in front of a computer screen and, after reading and signing an Ethical Clearance Form (Appendix 8) the first instruction screen appeared, and a practice picture (of a piece of furniture) was displayed. Alongside the picture/name, there were ten response lines. Subjects were told that they could respond freely, writing down anything that came to mind while viewing the picture/name, and that, if they wished to respond more than once, to separate their responses using the return key. Participants were

informed that, in the event that they failed to respond in 40 seconds, the computer would automatically move to the next stimulus item. After doing five practice trials, all of which involved exposure to furniture and household items, subjects were informed that their study was now starting, and they were shown, in succession, a series of ten fruits and ten vegetables, in response to which they typed into the computer any ideas relating to each stimulus object. Ordering of stimulus images was randomly determined for each subject. After completing the word response part of the study, subjects then rated each of the ten fruits and vegetables, again randomly presented, in terms of favourability. A 100-point Likert scale, anchored on one end with 'dislike intensely' and 'like immensely' at the other end was used to measure favourability. Favourability ratings for each of the 10 fruits and 10 vegetables were obtained by summing ratings of all respondents ( $n = 337$ ) and dividing by the number of respondents to derive a mean favourability rating. Subjects then filled in a nine-item demographic questionnaire, including items dealing with age, sex, marital status and occupation.

As stated above, seven different stimulus modes were used in the study, in order to investigate matters relating to cognitive representation of information. These were: named colour photographs, unnamed colour photographs, named black and white photographs, unnamed black and white photographs, named line drawings, unnamed line drawings and, finally, the name of the given fruit or vegetable on a white computer screen background. Use of actual fresh fruits and vegetables to comprise yet another mode of stimulus presentation was considered, however, strict quality control of all twenty fruits and vegetables over the course of the study (several months) could not be guaranteed, and it was felt that possible differences in quality of fruits and vegetables might introduce experimental 'noise' that could confound interpretation of the findings of the study. Allocation of respondents into each of the seven conditions was performed sequentially; that is, there was a fixed ordering of the seven conditions, and respondents one through seven were each placed into **one** of the (above mentioned) conditions; respondents eight through fourteen were also allocated to **one** of each of the seven conditions, and so on.

As stated above, following the word association task, respondents filled in favourability scales for each of the ten fruits and ten vegetables, and then completed a demographic questionnaire. They then filled out the 18-item

Self-monitoring Scale (Snyder, 1987). This questionnaire was also programmed into the computer, so that subjects merely clicked the mouse on either the 'yes' or 'no' buttons which were located beneath each question. Once again, respondents were thanked for their participation on completion of the study. They were also provided with contact details if they wished to access specific results of the study subsequently.

### **Planned approach to data analysis:**

The results section of the thesis is structured as follows:

Descriptive summaries of each of the ten fruits and ten vegetables are presented in the form of systemic networks of categories for each product (the full frequency breakdowns for each of the fruits and vegetables appear in Appendix 9). That is, the differential breakdown of responses into categories found for each product are described using a systemic network (Bliss et al., 1983). The data are then summarised with regard to main descriptive findings. That is, differences in word association responses as a function of age and sex are described. This is followed by a summary of favourability ratings (for fruits and vegetables) for females and males of different age groups.

Following this, is a data analysis relating to modes of stimulus presentation on responses. A description of qualitative differences in response observed for the seven modes of presentation is provided. These differences are tested for statistical significance using chi-square statistic.

Fine-tuning of categories relating to self-monitoring propensity follows. LSM and HSM responses are analysed in an attempt to determine how each group describes fresh fruits and vegetables. It is suggested that categories of responses for each group should reflect their (proposed) differential focus on particular product attributes.

A general discussion of the findings of this thesis will conclude the results section.