VALUE ACCESSIBILITY AND THE VALUE-ATTITUDE RELATIONSHIP: CAN WE THINK OF VALUES AS BEING STRUCTURALLY COMPAREABLE TO ATTITUDES?

by

Zoe Sarah Goodwin

Department of Psychology

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Abstract

This thesis addresses the measurement and manipulation of value accessibility, the influence of value accessibility on the value-attitude relationship and its implications for attitude change. Studies 1 and 2 assess whether value accessibility (as measured by response latency) is a reliable and valid measure of value strength, as indexed by ratings on the Schwartz Value Inventory (Schwartz & Bilsky, 1990). The results are promising but inconclusive. It is suggested that further work is necessary in order to determine if both measures tap the same aspects of value strength.

Study 3 examines whether manipulated increases in value accessibility raise the accessibility of semantically related attitudes. Attitude accessibility is determined by measuring the speed with which individuals respond to a query concerning the positive or negative connotation of an attitude item. Results indicate that response latencies are shorter when attitude items are preceded by a related, as opposed to an unrelated value prime. Furthermore, for related primes, this effect is strongest when the values are perceived to be personally 'important' than when they are considered to be 'not important'. These results provide evidence for the structural link between semantically related values and attitudes in individuals' minds.

Studies 4 and 5 examine the impact of value accessibility on attitude change, specifically its impact on the elaboration of persuasive appeals. Although the results of study 4 are insignificant, following some methodological changes, the results of study 5 provide support for such an effect. When value relevance and importance are high, increases in value accessibility lead to the increased elaboration of related persuasive messages, as indicated by greater differentiation between strong and weak persuasive arguments. The implications of these findings for the conceptualisation of value strength and value structure are discussed, as well as limitations of the present studies and some directions for future research.
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CHAPTER 1: LITERATURE REVIEW

OVERVIEW OF CHAPTER

This chapter is divided into seven main sections. Section 1 outlines the conceptualisation of values within social psychology. Dominant approaches to the value construct are examined as well as a number of theoretical controversies, which surround the concept. Definitions and theoretical approaches to the attitude concept are then reviewed in section 2 and the dominant dimensions of attitude strength are presented. Finally in section 3, the similarities and differences between the attitude and value constructs are discussed. The general conclusion is that whilst theorists have frequently included values within the generic category of attitudes, the two concepts can be distinguished on a number of characteristics, which justify their separate consideration.

In section 4, both attitude and value structure are reviewed. A summary of the vast literature in this field is not attempted but the two constructs are compared in the light of the main structural models. Similarities between the structural properties of values and attitudes are debated. Next, in section 5, the implications of attitude structure for resistance to change are analysed.

Section 6 discusses the measurement of attitudes and values in general. More specifically, with reference to attitudes, the measurement of accessibility using response latency techniques is discussed. Theories concerning the validity of operative and meta-attitudinal measurement techniques are also considered. With regard to value measurement, the Schwartz Value Inventory (SVI) developed by Schwartz and his co-workers (Schwartz & Bilsky, 1987; Schwartz, 1996;) is discussed in detail.

In conclusion, section 7 focuses on the rationale of the present research. The value definition that informs the current thesis is outlined and the research is discussed in brief.
SECTION 1: THE CONCEPTUALISTION OF VALUES

Social Science and the Value Concept

The study of values is central to a number of disciplines within the social sciences. It involves the intersection of interests of philosophers, anthropologists, sociologists and psychologists (Braithwaite & Scott, 1991). Values are frequently referred to in theories and this reflects the widely held assumption that values influence attitudes and are at the root of behaviour (Van Deth & Scarbrough, 1995). There have been numerous conceptualisations of values, however, and no general understanding of the term values appears to exist across the social sciences. Wright (1955, p.449 as cited by Van Deth & Scarbrough (1995, p.22), for example, stated that 'the psychological, scientific, philosophical, and sociological school of general ethics have respectively based values on desire, necessity, reason and custom'. In economics, values are used to distinguish between the different approaches to economic life (e.g. Marxist, Ricardian), whilst the basic economic concepts such as utility, exchange, and price are all related to values. A review by Knieciak, (1976) of distinct meanings of the term 'value' in 4000 publications resulted in 180 different definitions (Braithwaite & Scott, 1991).

The Historical Development of the Value Concept within Social Psychology

This conceptual diversity of values within the social sciences is also visible within the discipline of social psychology. The earliest social psychological studies of values include those of Allport (1935) and Kluckhohn (1951). The 1960's led to further research (e.g. Allport, Vernon & Lindsey, 1960; Scott, 1965; Smith, 1969) but value research was held back by problems of definition and reservations about the empirical viability of the construct. This resulted in conceptual diversity and theoretical division within the value domain.

Most recent researchers recognize the work of Milton Rokeach (1968, 1973) as particularly significant. His work is seen as integrative of research up to the late 1960's in terms of value definition, conceptualisation and measurement (Braithwaite & Scott, 1991). As such, the contribution of Rokeach (1968, 1973) is generally considered to be a turning point in research. Rokeach (1973, p.5) defined a value as: "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence." He regarded values as cognitive representations of the demands of society and the needs of individuals. He proposed that values denote either behaviours (instrumental values), or desirable goals (terminal
values). Values were thought to be more abstract than attitudes and relatively specific, transcending objects and situations.

Rokeach believed that there are a relatively small number of important values and that it is the relative importance of these values within a person's value system (rather than the absolute importance of any one value) that ultimately determines attitudes and behaviour (see also Tetlock, 1986). He argued that people usually feel strongly about their central values as is evident when values are questioned or frustrated. He suggested that values are structured hierarchically and developed a measurement instrument — The Value Survey (Rokeach, 1973) - to determine their relative importance.

Despite Rokeach's work, a review of the relevant literature suggests that the value construct remains problematic and lacking in coherence (e.g. Braithwaite, & Scott 1991; Dose, 1997). Three interconnected concerns regarding value conceptualisation can be identified. These are:

1. An ongoing lack of consensus regarding the definition of the concept - since Rokeach, values have been defined as: general beliefs (Feather, 1975; 1995); beliefs about the way an individual ought to behave (Ravlin & Meglino, 1987); goals (Schwartz & Bilsky, 1987); attitudes (Fishbein & Ajzen, 1975); a 'special case' of attitude (Levy, 1990); 'similar to' attitudes (Homer & Kahle, 1988); modes of arguing and thinking (Billig, 1987) and as the moral dimension of action (Van Deth & Scarbrough, 1995).

In 1968; Albert stated that, "For the foreseeable future, it is doubtful whether a definition of values can be produced that embraces all the meanings assigned to the term and its cognates, or that would be acceptable to all investigators (p288)" A review of the research literature on 'values' suggests that 30 years later, the conceptualisation of value remains in dispute. However, Schwartz and Bilsky, (1987) have outlined five main features of values which are thought to encompass those identified by different theorists, namely, values are; (a) concepts or beliefs, (b) about desirable end states or behaviours, (c) that transcend specific situations, (d) guide the selection or evaluation of behaviour or events, and (e) are ordered by relative importance. In short, values are generally thought of as a finite number of abstract goals that are arranged hierarchically into a value system and that can serve as a guide to attitudes and behaviour (e.g. Kluckholn, 1951; Rokeach, 1973; Schwartz, 1992).
2. The lack of a unifying theoretical structure - there has been little agreement concerning the structure of individual values, how value systems are organised and also how they relate to other psychological constructs, in particular to attitudes.

3. Measurement issues - a multitude of value inventories have been developed but there are a number of difficulties associated with assessment relying on self-report. Also, there is considerable diversity in the dimensions used for the evaluation of values. Braithwaite & Scott's (1991) review of 15 value measures revealed that value judgements have been made in terms of preferences, agreement, goodness, justifiability, importance as guiding principles, and consistent admiration. Although the semantic distinctiveness of the dimensions has been well documented e.g. Levitin (1968), their empirical distinctiveness is uncertain and research has suggested both equivalence (e.g. Bolt, 1978) and non-equivalence (e.g. Morris, 1956).

The Meaning and Stability of Values

There are two ongoing theoretical debates concerning the value concept. The first concerns the meaning of value measures in terms of their empirical viability and the second concerns value stability. In the same way that a number of theorists have suggested attitudes might be "cognitive illusions" which are created after behaviour (Bem, 1970), a number of theorists have questioned the empirical viability of the value construct. For example, Van Deth and Scarbrough (1995) do not accept that values are 'real'. They regard values as "a priori" concepts, introduced by individuals in order to help them deal with their environment. Although their meaning can be inferred by researchers in the analysis of underlying patterns among attitudes, or 'value orientations', there is no presumption that respondents to the value surveys have used the values in the same way. In a similar vein, research derived from cognitive dissonance theory (Festinger, 1957), has suggested that people act first and then invoke whatever salient values conventionally justify those acts e.g. Kristiansen & Zanna (1988).

Up to this point, traditional models of values that assume a stable value system have been discussed. Implicit in these models is the assumption that attitudes are based on a relatively invariant rank ordering of an individual's values, and that attitudes towards an issue are guided by this relatively enduring set of value priorities. However, there is evidence that these rank-orders can vary according to contextual factors. Furthermore, this context-specific rank ordering of values can predict attitudes more strongly than when the same values are rank ordered as general guiding principles.
The stable value system is illustrated by Rokeach's (1973, p.5) definition of value systems as an "enduring organisation of beliefs", which implies that individuals adhere to a relatively determinate, 'enduring', body of values, in which the only difference between one value and another is their place in the hierarchy of salience - the 'continuum of relative importance'. However, such a definition suggests that individuals live their lives in a single domain in which a single set of values serve whenever and wherever action is called for. Van Deth & Scarborough (1995) argue that this is implausible since people take part in several worlds and universes of meaning, each of which are governed by situationally appropriate values.

For instance they suggest that the expressions, 'family values', 'spiritual values' and 'commercial values' have become part of everyday language. It is suggested that conflict may occur between 'moral discourses' as the different worlds intersect. Similarly, Becker (1981) contrasts the altruistic values embedded in the family with the more competitive values of the business world. These suggestions negate the idea that values are universally desirable. Although there may be some values that 'transcendentally guide actions and judgments across specific objects and situations' (Rokeach, 1976, p.160), values may need to be studied within their social context.

This multiple values perspective is supported in a study by Seligman & Katz (1996) who demonstrated that values can be ranked differently depending on whether individuals are instructed to rank the values as they are generally important to them versus when the ranking instructions specify a ranking context such as abortion. The values of freedom and wisdom were found to become more or less important, in line with their attitudes towards abortion, compared to their earlier value rankings made independently of a particular context. This research suggests that different situations may prompt people to think in terms of different value priorities and that relationships between values may be situationally specific.

Seligman and Katz (1996), recognising evidence for both value stability and flexibility, have suggested that a 'middle ground' is needed between the two. They argue that individuals need both a coherent value system reflecting their self-concepts but also to be able to respond flexibly if necessary. They conclude, “taken to extreme, neither the stable view nor the multiple value system perspective is tenable” (Seligman & Katz, 1996, p.71). Future research will hopefully alleviate the confusion between both these possibilities.
SECTION 2: THE ATTITUDE CONSTRUCT

The conceptualisations of attitudes have focused on the evaluation of ‘attitude objects’, although many definitions also include a number of components, namely, cognitive (consciously held beliefs about characteristics of the attitude object); affective (feelings, moods, related sympathetic nervous system activity) and conative (disposition for action). There is disagreement concerning the relative importance of these components. Cognitive theorists usually argue that underlying beliefs are fundamental, behaviourists concentrate on the conative component and define attitudes as ‘response tendencies’, whilst most other researchers suggest that a combination of the affective and evaluative components are critical (Strahlberg & Frey, 1992). The definition of attitude therefore depends on the theoretical background of the researcher and is reflected in their structural models of attitudes (see section 4).

Rosenberg and Hovland (1960, p.3), for example, provide a very broad definition of attitudes as “predispositions to respond to some class of stimuli with certain classes of response”. They specify three classes of response, namely, affective, cognitive, and conative/behavioural. This “three-component model” of attitudes assumes the three components should be moderately correlated and the consistency between the evaluation of an object and the different types of information associated with it has been studied extensively. However, a large degree of discrepancy has been found between empirical measures of the three attitudinal components (Eagly & Chaiken, 1993) and since the model has not been shown to have strong predictive or explanatory power (Pratkanis, 1989), its status is currently in decline (e.g. Greenwald, 1989).

Contrary to the multicomponent view of attitudes, other theorists have proposed unidimensional attitude conceptualisations that focus on the evaluation of an attitude as its most important or even sole component. For example, Petty & Cacioppo (1981, P.7) state, “the term attitude should be used to refer to a general, enduring positive or negative feeling about some person, object, or issue”. McGuire (1985, p.239) states that “...attitudes are defined at least implicitly as responses that locate objects of thought’ on ‘dimensions of judgement’. Eagly & Chaiken, (1993, p.269) define an attitude as a “psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor”. Such definitions see attitudes as evaluations and refer to an individuals’ orientation to an object, or attitude referent (Augoustinos & Walker, 1995).
Zanna & Rampel (1988) have suggested that although attitudes can be based on cognitive and affective information as well as information concerning past behaviour, these categories of information can act independently or in combination to influence attitudes. However, they suggest that defining attitudes simply as evaluations has heuristic value.

Although there are other conceptions of attitudes, the unidimensional and three-component models have received the most attention in the literature. The definition of attitude as an evaluation is becoming progressively more widespread though it is not yet universal (Augoustinos & Walker, 1995). However, in spite of attitudes being the most researched topic in social psychology, Augoustinos & Walker (1995, p.12) remark that their meaning is “more often than not left tacit, vague and inconsistent”.

**Attitude Strength**

*Definition of Attitude Strength*

There has been little precision in the definition of attitude strength (Raden, 1985) and no one understanding of attitude strength dominates contemporary research. However, there is general agreement as to the features that define strong attitudes. Strong attitudes are thought to be persistent over time, resistant to change, influence information processing and judgment, and guide behaviour, whilst weaker attitudes lack one or more of these features (e.g. Krosnick & Petty, 1995).

A large body of empirical research has been accumulated supporting the idea that a range of different properties of attitudes influences this underlying strength. Scott (1968) produced one of the first lists of strength properties. This included ten attitudinal properties, namely, extremity, intensity, ambivalence, salience, affective salience, cognitive complexity, overtness, embeddedness, flexibility and consciousness.

Later, Raden (1985) identified a number of additional labels, which had been applied to the concept of attitude strength, namely, accessibility, certainty, direct experience, importance, stability, evaluative-consistency, vested interest and latitudes of acceptance and importance. Since Raden, several other strength characteristics have been proposed including elaboration, knowledge, personal relevance and inter- and intra-attitudinal consistency (e.g. Petty & Krosnick, 1995).
Considering the number of strength properties identified, it is not surprising that, with the exception of a few (e.g. Smith, Bruner and White, 1956), the majority of researchers have focused on just one or two strength-related properties, their causes and consequence and the relations among them (Wegener et al, 1995).

**Categorisation of Strength Properties**

A number of categorisations of the attitude properties outlined above have been proposed. For example, Eagly & Chaiken, (1993), distinguish between 'structural' variables (derived from models of attitude structure) and 'experiential' strength variables (defined by subjective awareness of attitude strength). However, Petty and Krosnick (1995) provide a more extensive categorisation of strength variables, distinguishing between aspects of the attitude itself and aspects of the structure associated with the attitude. Eagly & Chaiken's (1993) 'experiential' variables are labelled 'subjective beliefs', and they provide an additional category, 'cognitive processes'. These categories are discussed below.

Two types of structural variables have been identified:
(a) Aspects of the attitude itself: this refers to aspects of the evaluative continuum, which has been divided into attitude valence (positive or negative) and attitude extremity (degree of favourability / unfavourability). It is hypothesised that negative attitudes might be more durable and impactful than positive ones and that the more extreme an attitude, the more an individual likes or dislikes an attitude object
(b) Aspects of the structure associated with the attitude and attitude object in memory: Eagly & Chaiken (1998) divided attitude structure into two types: (i) intra-attitudinal e.g. knowledge, consistency and accessibility (ii) inter-attitudinal structure (e.g. centrality, embeddedness). Both attitude structure and the conceptualisation of attitude accessibility will be discussed in more detail below.

**Experiential variables / subjective beliefs**

Individuals hold beliefs about the attributes of their own attitudes and about the attitude object. This 'subjective awareness' of attitude strength is usually measured by self-report and includes personal involvement, personal relevance, importance and certainty. These beliefs have been referred to as 'metacognitions' that people hold in relation to their attitudes (Bassili, 1996). The measurement validity of such experiential strength variables has been questioned. This issue will be discussed in section 6.
Cognitive Processes

Cognitive processes by which an attitude is formed include ‘elaboration’. This refers to the degree of thinking that an individual does and has done about the attributes of an attitude object, its qualities and weaknesses (e.g. Petty & Cacioppo, 1981; 1986).

Fazio (1995) has proposed a more limited structural conceptualisation of attitude strength than Eagly & Chaiken (1993). He distinguishes between qualities of the attitude as represented in memory and antecedents or consequences of such qualities. Although there is general agreement concerning the consequences of attitude strength, Fazio disputes a number of properties, which have been considered variables of attitudinal strength.

In Fazio’s framework, qualities of the attitude (and hence the concept of attitude strength) refer solely to variables that focus on the representation of the attitude in memory e.g. attitude accessibility (the strength of the object evaluation association in memory and the resulting capability for automatic activation — see section 2); attitude ambivalence (the likelihood that the attitude will activate both positive and negative evaluations simultaneously) and affective-cognitive discrepancy (the extent to which any affectively based and cognitively based evaluations that might be activated in response to the attitude object are consistent with each other).

According to Fazio, the ‘experiential’ or ‘subjective’ variables identified by Eagly and Chaiken (1998) and Krosnick and Petty (1995), respectively, would describe the relationship between the individual and the attitude issue. Despite having implications for the strength of the attitude, these variables are, it is claimed, more rightly thought of as ‘antecedents’ of attitude strength rather than indicants of attitude strength. Furthermore, the structural properties relating to the ‘knowledge base’ of the attitude and the inclusion of the extent of elaboration, as a strength property (Krosnick and Petty', 1995), have been disputed by Fazio (1995). He suggests that they do not reflect the qualities of the attitude but the properties of the representation of the attitude object or issue itself. As a result they should be treated as consequences that may influence attitude strength.

Accessibility
Construct Accessibility

The accessibility of psychological constructs, which include attitudes and values, has been defined as "the readiness with which a stored construct is retrieved from memory and/or utilised in stimulus encoding" (Higgins & King, 1981). Researchers have identified a number of determinants of construct accessibility (Higgins & King, 1981). These include salience (e.g. Higgins & King, 1981) and the relation of a construct to other accessible constructs e.g. Collins & Loftus, (1973), recency of activation e.g. Wyer & Srull, (1981). The results of several studies have demonstrated that frequent activation of a construct increases its accessibility e.g. Houston & Fazio, (1989); Fazio, Chen, McDonal & Sherman, (1982); Powell & Fazio, (1984).

Attitude Accessibility

As well as research into construct accessibility in general, there has been much research into the accessibility of attitudes in particular. Although attitude accessibility has been addressed by a number of theorists, Fazio and his colleagues (Fazio & Williams, 1986, Fazio, 1990, Fazio et al, 1992, Powell and Fazio, 1994) have provided the most coherent theoretical account (Bassili, 1995). Fazio (1995, p.247) defines an attitude as an "association in memory between an attitude object and one’s evaluation of the object". The range of potential attitude objects is said to be very broad and includes specific individuals, physical objects, categories of situations / people, and physical objects and social issues. The evaluative continuum can be split into valence (positive or negative) and extremity (degree of favourability / unfavourability).

Attitudes are assumed to be stored in an associative memory network in which evaluations of an attitude object are activated by a process of ‘spreading activation’. Attitude objects that are frequently encountered or are highly salient to the individual are thought to become strongly associated with their evaluation and as a result, a decision about the object can be made very shortly after the object is presented. Novel objects and those of low salience to the individual will not be strongly associated with an evaluation and the individual will need to deliberate more extensively about any decisions that might relate to them (Fazio et al, 1982).

In order to test this view of attitudes as object-evaluation associations, Fazio and his associates (Fazio et al, 1982; Powell & Fazio, 1984) conducted a series of experiments, which employed latency of response to an attitudinal inquiry as a measure of associative strength. Fazio et al (1986) demonstrated that attitudes, which were chronically accessible, were more likely to be activated by the mere presence of the attitude object. In a priming paradigm, the strength of the associative link
between an object and its evaluation was initially tested using a straightforward response latency procedure. Objects that are associated with quick evaluative (good/bad) decisions were assumed to be those attitudes that are more strongly and unambiguously held. Long response latencies were thought to reflect weak or non-existent links. Subjects were asked to indicate as quickly as possible whether they felt positively or negatively toward a given attitude object. Subjects who had been induced to express their attitudes repeatedly believed to strengthen the object-evaluation association - were able to respond relatively quickly to these direct inquiries about their attitudes.

In an extension of the paradigm, Fazio et al (1986) presented subjects with the name of an attitude object (prime) followed by an adjective with a positive or negative evaluation (target). Subjects then pressed a button indicating whether the adjective had a positive or negative connotation. The prime could be evaluatively congruent with the target (e.g. cockroach-grisly) or it could be incongruent (e.g. sunset-pain). Responses to the target were faster when the prime and target were evaluatively congruent but only when attitudes towards the prime had been found to be highly accessible on an earlier response latency task. In an experimental version of the procedure, accessibility of the prime was manipulated by means of the repeated expression procedure. Results indicated that there was a greater correspondence between prime-target congruence and response latencies on the target when attitudes toward the prime had been repeatedly expressed. Thus, it appears that attitudes can be activated automatically upon exposure to an attitude object, and the more accessible the attitude, the greater is the likelihood of this automatic activation.

Fazio (1990) suggests that when people are either unable or unmotivated to deliberate on information, spontaneous or automatic processes will mediate any effect of attitudes on behaviour. However, this mediating effect is a function of the strength of the evaluative association with the attitude object. If conditions conducive to deliberative processing are not present and the evaluative association is too weak to be activated, behaviour will be based on factors other than attitudes.

These findings imply that attitudes characterized by strong object-evaluation associations may be more accessible from memory, irrespective of whether this associative strength was measured or manipulated experimentally, evidence of automatic activation of the attitude was found to be strongest when the association was 'strong'. These findings regarding the moderating role of associative strength have been replicated numerous times and a meta-analysis examining the effect of associative strength on automatic activation has supported its reliability (Fazio, 1995).
However, it is notable that Fazio et al.’s (1986) findings that attitude strength moderates the automatic activation effect have been challenged. Bargh and co-workers (e.g. Bargh, Chaiken, Govender and Pratto, 1992; Bargh, Chaiken, Raymond and Hymes, 1996) have been unable to replicate the findings using a similar paradigm. It is suggested that attitude strength is not a moderating influence on the automatic activation effect and that the unconditional activation effect may result from general lexical associations between words and evaluations (Bargh et al, 1996).

Despite these challenges, consistent with Fazio’s work, a substantial body of research has been accumulated demonstrating a number of consequences of accessibility that suggest that attitudes relatively high in accessibility are stronger than attitudes relatively low in accessibility (Fabrigar et al, 1998). For example, highly accessible attitudes have been found to be more predictive of a wide variety of behaviours (e.g. Fazio, Chen, McDonel, & Sherman, 1982; Bassili 1993; 1995; Berger and Mitchell, 1989) than are attitudes low in accessibility. Accessible attitudes influence perceptions of the attitude object, such that one is more likely to make attitude-consistent judgements about relevant information (Fazio & Williams, 1986; Houston & Fazio, 1989). Also, the more accessible the attitude, the more resistant it is to contradictory information (Houston & Fazio, 1989); cf, Wu & Schaffer, 1987).

Is Attitude Strength Uni- or Multi-dimensional in Nature?

An ongoing area of debate among attitude theorists concerns the extent to which the range of attitude properties identified in the literature can be reduced to one single underlying construct representing attitude strength. Correlational measures of attitude strength suggest that strength is multidimensional. For example, Raden (1985), in his review of strength variables identified in the literature, found low correlations between strength-related properties. He concluded that attitudinal properties are not interchangeable and that attitude strength is not a “global, unitary property”. Furthermore, no clear factor structure of attitude strength has been found in factor analytic studies (e.g. Abelson, 1988, Bassili, 1986). Similarly, Krosnick et al (1993) using confirmatory factor analysis, found the majority of dimensions to be only weakly related and a multifactor model was required to account for their intercorrelations. It was proposed that the dimensions be viewed as ‘distinct’ as opposed to different expressions of a collection of core ‘attributes’ (Krosnick et al, 1993).

So, although it is generally recognised that no one construct can account for the multitude of attitudinal dimensions identified, the dimensions are thought to reflect a limited number of common higher order dimensions that produce associations with stability, resistance, and impact on cognition and behaviour.
Eagly & Chaiken (1998) suggest that a distinction could be made between affective and cognitive aspects of attitude strength and a possible future dimensions could be based on attitude function. However, they also maintain that all dimensions are ultimately explainable in terms of attitude structure (Eagly & Chaiken, 1998). Indeed, research has established that the structural dimension of accessibility (e.g., Fazio, 1986) is correlated with a number of aspects of attitude structure (e.g., ambivalence Bargh et al. 1992; Fazio, 1995) suggesting that accessibility may function as an indicator of the overall strength that results from such attitude structure. Alternatively, accessibility could be a consequence of strength that is defined in intra- or inter-attitudinal terms (Eagly & Chaiken, 1998).

Exactly how multiple strength-related attitude properties are related and how attitude measures and manipulations may access multiple constructs related to attitude strength, remains an issue for further research. Therefore, conclusions concerning the distinctive contributions of each strength-related property will benefit from procedures that involve the experimental or statistical control of potential confounding variables (Wegener et al., 1995).
SECTION 3: VALUES AND ATTITUDES

A review of the social psychological literature contains innumerable references to the relationship between values and attitudes and this relationship has been supported by extensive empirical studies. Despite general recognition of a link between attitudes and values, debate concerning the definition of values and their conceptual nature has resulted in a lack of consensus concerning the exact relationship between the two concepts.Whilst the two terms are sometimes used interchangeably—suggesting little distinction between the two concepts, some theorists suggest that values can be categorised as a specific type of attitude. However, both similarities and differences between values and attitudes have been identified. In addition, a number of theorists have stressed the hierarchical relationship between values and attitudes. These varying interpretations of the value-attitude relationship will be discussed in more detail below.

Values as a Type of Attitude

Whilst a number of attitude theorists tend to subsume the concept of values within their discussion of attitudes, by using a broad definition of attitudes (e.g. McGuire, 1986), which includes abstract attitudes, it is interesting to note that within attitude research, the majority of empirical studies carried out utilise specific attitudes and general values, and attitude processes are seldom reported in terms of common values, for example, those reported in the Schwartz Value Inventory (Schwartz & Bilsky, 1990). Value researchers, on the other hand, tend to argue for a distinction between the two concepts. Furthermore, attitude surveys generally refer to specific attitudes, whilst surveys measuring systems of values have developed separately.

Indeed, a number of psychological concepts once defined within the generic category of ‘attitudes’, have received more attention, both theoretically and empirically, and as a consequence, have developed specific names. For example, attitudes towards groups have been called ‘prejudice’, whilst attitudes towards the self have been termed ‘self-esteem’ (Eagly & Chaiken, 1998). The same process can be seen to have occurred for values. Attitudes towards relatively abstract goals or end-states of human existence have been labelled ‘values’ (Eagly & Chaiken, 1998). The study of values has slowly become established as a separate research discipline, earning independent attention within many psychology texts.
A number of similarities between values and attitudes have been highlighted. Firstly, it is generally agreed that values, like attitudes, cannot be observed directly. Both are hypothetical constructs that are inferred through behavioural, cognitive or affective responding (e.g. Eagly & Chaiken, 1993; Ajzen, 2000).

Levy (1990) suggests that since value items are characterized by a range ordered from positive to negative towards the object, such items automatically belong to the ‘universe’ of attitude items. Indeed, attitude theorists have generally defined attitude objects very broadly. Attitude theorists have both collectively and individually treated practically any nameable or discernable entity as an attitude object (Greenwald, 1989; Fazio, 1995). In addition, theorists have studied attitudes towards abstract concepts (e.g. personality traits) and other attitudes (e.g. towards prejudice) (Greenwald, 1989). Within the constraints of such definitions, values could presumably be categorised as ‘attitude objects’. However, as Greenwald (1989) notes, the cost of such a broad definition could be a lack of both theoretical development and a lack of precision.

Differences between Values and Attitudes

Whilst some theorists suggest that values share many of the defining features of attitudes, values have also been differentiated from attitudes on a number of dimensions. These differences could be interpreted in two ways: either as evidence that values and attitudes are separate concepts or that values exist as a subset within the attitude domain.

Firstly, it is generally acknowledged that unlike attitudes, values do not correspond to a particular object or situation. This idea of values being general rather than specific is reflected in numerous definitions. Values have been referred to as “generalised attitudes” (Dukes 1955; Smith, 1963; Bem, 1970) and as relatively ‘abstract’ goals or end states of human existence (Rokeach 1973; Eagly & Chaiken 1993). Rokeach (1973) differentiated the concepts in terms of the types of beliefs composing them i.e. a value refers to a specific ‘proscriptive or prescriptive belief’ that transcends specific objects or situations, while an attitude refers to an arrangement of several beliefs focused on a specific object or situation. This idea of values being abstract entities is reflected in value surveys, which typically ask respondents to report on the strength (e.g. importance) of their values in the abstract, with no situational/contextual boundaries.
Secondly, values are usually regarded as more consistent than attitudes across both time and circumstance. However, the contextual of values stability has been questioned as was discussed earlier. Thirdly, values have been likened to cultural truisms (e.g. Maio and Olson, 1998) suggesting that, as with truisms, people should agree highly with values and they should be relatively bereft of cognitive support. Maio & Olson refer to conflicting theoretical evidence in the literature. Supportive arguments for this idea include the fact that value rankings tend to be unstable across situations (Seligman & Katz, 1996) and this may occur because individuals lack a consistent set of reasons to support the values and so adjust values in different situations. Secondly, values are learned partly through uncritical socialisation processes (e.g. Kelman 1974). Lastly, because values serve universal basic needs (e.g. Schwartz, 1992), it is the drive to fulfil these needs that causes values to be important. If values serve universal needs they should be widely shared, and therefore people may rarely question or reconsider their values. Indeed Maio and Olson found supportive evidence that values do not derive their strength from cognitive support: specifically, asking individuals to focus on the reasons for their values resulted in value change. They suggest that values are supported primarily by memories of value-consistent behaviour.

This conceptualisation of values highlights two potential differences between values and attitudes. For example, whereas the evaluation of an attitude object is thought to range from a highly emotional to a more elaborated cognitive response (Fazio, 1995), the evaluation in the case of values is principally emotive if values are relatively bereft of cognitive support. It is often observed that if individuals are pressed to justify their attitudes, all explanations ultimately terminate with references to values that people are unable to justify any further. This would be expected if values lacked supportive arguments. For example Tetlock (1986) suggests that anti-abortion partisans consider “because life is sacred” self-explanatory for their position whilst pro-choice supporters consider “women’s liberty” a self-justifying rationalization for their decision.

Hierarchical Relationship between Values and Attitudes

Some theorists have suggested that there may be a hierarchical relationship between attitudes and values. Early value theorists such as Woodruff & Divesta (1948, p.657), suggest that an attitude towards a specific object is a result of “the way one conceives that object from the standpoint of its effects on one’s most cherished values”. Ostrom and Brock (1968) viewed attitudinal involvement in terms of relations between attitudes and values whilst Johnson & Eagly (1989) proposed the concept
of value-relevant involvement to refer to a motivational state induced by the linkage of an activated attitude to one's values. Similarly, in their discussion of 'value-centrality', Abelson & Prentice (1989) talk about the extent to which particular values represent beliefs which are 'deeper' and more 'fundamental' to the individual. Stern et al (1995) explored a model in which individuals construct attitudes to new attitude objects by considering the consequences of an attitude for their personal values and from this information construct an attitude. They propose that values provide a stable and relatively enduring foundation for attitudes.

Rokeach (1973) viewed the self-system as a hierarchical arrangement in which the self-concept is most central, followed in order of decreasing centrality, by values, attitudes and behaviour. Changes in any one element in the system were thought to affect other parts. Changes in more central aspects such as the self-concept would be likely to result in relatively enduring and far-reaching changes in less central aspects such as behaviour, whereas changes in less central aspects would not influence central aspects as strongly. Likewise, Feather (1996), suggests that attitudes are often embedded in a complex network of relations between attitudes, beliefs, and values in which strongly held values are core, or central, elements in the sense that they are linked to many attitudes and beliefs as well as to other values.

Feather (1996) argued that values might be treated as background factors that affect the strength and sign of the attitudes. He proposed that the general valuing of "achievement" and "honesty" would, for instance, be translated into positive evaluations of specific achieving or honest actions and specific successes following such actions.

The view of a hierarchical relationship between values and attitudes has intuitive appeal since it is often observed that if individuals are pressed to justify their attitudes, explanations frequently conclude with references to values that people find it difficult to defend further (Eagly & Chaiken, 1993). As discussed above, this view is in line with the findings of Maio & Olson, (1998) and Tetlock (1991).

A number of theorists regard values as heuristic devices, implying that, rather than engaging in careful analysis of the impact of different behaviour on internalised values, individuals may react to situations whilst on 'autopilot' with instinctive responses, which depend on the momentary situation (Van Deth & Scarbrough, 1995). An individual may keep track of a small number of general values, which in turn provide direction on how to respond to a large number of specific issues (Tetlock, 1991). For example,
Butler & Stokes (1971, p. 230) suggest that, "many of the issues of electoral politics owe more to the voters' orientation towards values and goals than to their assessment of policy alternatives".

The hierarchical nature of values and attitudes has been discussed within literature concerning the 'inter-attitudinal' structure of attitudes and the 'anchoring' of attitudes to values (Eagly & Chaiken, 1995, 1998). It is suggested that some attitudes are linked to more abstract attitudes (i.e. values) in a hierarchical structure and that such attitudes are particularly strong. For example, if a 'lower-level' attitude (e.g. recycling) were a consequence of a more general attitude or value (e.g. environmental preservation), then the lower-level attitude would be more resistant to change since it would derive its support from its relation to the higher-level attitude (Eagly & Chaiken, 1995). These structural considerations are discussed further in section 5 with reference to attitude change.

As well as hierarchical structures within an individual's cognitive system, hierarchical links between thematically consistent structures across individuals i.e. 'ideologies' have been examined. An ideology is defined as a shared collection of beliefs, attitudes and values organised around some coherent core and associated with a particular group (Van Deth & Scarbrough, 1995). Beliefs associated with a general attitude may allow attitudes towards specific social issues to be derived. So, attitudes are formed at least partially in top-down fashion as generalisations from broader issues.

Empirical Evidence

Empirical evidence for a hierarchical relationship between attitudes and values comes from both correlational and experimental studies. For example, there is considerable evidence that the general importance of particular values can predict particular attitudes towards a wide range of social issues e.g. abortion (Seligman & Katz, 1996); racial attitudes (Katz & Hass, 1988), civil rights (Rokeach, 1973). These findings are commonly assumed to imply that values underlie or exert a causal influence on attitudes. For example, Stern, Dietz, Kalof, and Guagnano (1995) argued that in relation to environmental attitudes, people might fall back on their values to develop a position when faced with a specific environmental dilemma. In factor analytic studies, they derived measures of three values that were positively or negatively correlated with this attitude, namely, egoistic, altruistic and biospheric values.

Rokeach (1979) has shown that creating a sense of self-dissatisfaction by drawing a person's attention to inconsistencies between values and attitudes can be a catalyst for promoting change throughout the whole system. Similar findings have been found by Ball-Rokeach, Rokeach & Grube (1984). Support for
Rokeach's hierarchical model was obtained using a "value self-confrontation procedure". It was assumed that if people could be induced to perceive an inconsistency between their self-concept and the relative ranking of important values, self-dissatisfaction would be aroused. This dissatisfaction should motivate people to change the rankings of these values, resulting in changes in attitudes and behaviour. Subjects were first asked to rank order 18 terminal values and were then lead to believe that the relative ranking of 2 of their values (freedom and equality) differed from the ranking of the same two values by members of a positive reference group.

For example, they were told that members of the positive reference group (people in favour of civil rights) placed a much higher priority on the importance of equality than did members of the negative reference group (those opposed to civil rights). It was assumed that subjects tended to be sympathetic to the civil rights movement, and would therefore identify with the positive reference group. As a result, Rokeach believed that the perceived discrepancy between the stated value priorities of subjects and the value priorities said to be held by pro-civil rights individuals would cause subjects to experience dissatisfaction, resulting in long-term changes in values, attitudes and behaviour. Indeed, changes in all these areas were observed.

Subjects were tested 17 months after the manipulation and relative to those in control conditions, experimental subjects ranked equality higher, expressed more positive attitudes towards blacks, and were more willing to join or renew their membership in the National Association for the Advancement of Coloured People. Rokeach implied that the sequence of changes ending in behaviour change began with self-dissatisfaction associated with the inconsistency between the actual importance rankings of values and the way subjects thought these values should be ranked. The value rankings were therefore reordered, and the relevant attitudes then changed to reflect the new value priorities. Finally, behaviour was adjusted to be consistent with the attitudes. Similar findings have been found by a number of theorists (e.g. Schwartz & Inbar-Saban, 1988).

There have been few explicit attempts to model the relationship of values and attitudes with the exception of Homer & Kahle (1988), who used structural equation modelling techniques to explore the Value-Attitude-Behaviour Hierarchy. Measures were taken of values, attitudes and behaviours associated with the consumption of natural foods. Subjects rated the importance of 9 values including self-respect, excitement, security, and a sense of accomplishment. In addition to responding to questions about a number of attitudes and behaviours related to shopping for food. These included
questions concerning attitudes about nutrition and natural foods, as well as questions about how frequently they shopped for food and how much money they spent on food.

Modelling revealed that correlations among these elements best fitted a hierarchical causal model in which values are superordinate, behaviour is subordinate, and attitudes mediate the relationships. Correlations between values and nutrition attitudes were stronger than correlations between values and shopping behaviours, and attitudes were significantly correlated with behaviours. These results were consistent with Rokeach's (1973) model. Prislin et al (1997) demonstrated that individuals' attitudes towards a news item concerning sex discrimination were derived from their existing evaluation on the general issue of equal rights for women.

Although most research has provided evidence of a one-way relationship between values and attitudes, not all theorists have conceptualised the value-attitude relationship in this way. Van Deth & Scarbrough (1995), for example, perceive the 'values-attitudes axis' as a reciprocal relationship. They argue that values have an impact on attitudes but likewise, attitudes can influence values by the way individuals learn from their own experience in appealing to their values, and also from the influence of the values of other people.

There does not appear to be any one understanding of the relationship between attitudes and values. Moreover, it may not be that all values exist within a value-attitude hierarchy, an idea that is supported by theories and research on attitude function (e.g. Smith, Bruner & White, 1956; Katz, 1960) which suggest that attitudes serve one of several possible functions of which value expression may be only one.
SECTION 4: VALUE & ATTITUDE STRUCTURE

Attitude Structure

Overview of Attitude Structure

A comprehensive review of the literature pertaining to attitude structure is beyond the scope of this discussion. The following section offers a brief review of social cognition approaches and a discussion of those issues, which are most germane to the current thesis.

Psychologists have frequently imbued attitudes with structural properties (Eagly & Chaiken, 1993) and as discussed earlier, attitude structure has been identified as one aspect of attitude strength (e.g. Fazio, 1995; Petty & Krosnick, 1995; Eagly & Chaiken, 1998). There is extensive reference to attitude structure within both the social and cognitive psychology literature. McGuire (1989) provides a unifying framework for organising these different perspectives. This includes three levels of increasing structural complexity; the structure of individual attitudes, systems of attitudes and systems of attitudes in relation to other systems within the individual.

Eagly & Chaiken (1993) discuss the first two levels in their distinction between intra- and inter-attitudinal attitude structures. They suggest that the structure of attitudes results from one of two processes by which an attitude is initially formed. Firstly, an attitude can be formed experientially i.e. by cognitive, affective or behavioural responding to an attitude object (directly or indirectly, to cues that represent the attitude object). Information produced by these responses is stored as mental associations between the attitude object and prior experiences/responses. This results in 'intra-attitudinal' structure. Secondly establishing links between attitude objects can form an attitude. These links are stored, along with the target attitude itself and this results in 'inter-attitudinal' structure. These larger structures may be cognitively consistent, as defined by balance theory (Heider, 1958) or thematically consistent in the sense that they form an ideology (Eagly & Chaiken, 1993).

Other theorists have focused on either the structure of individual attitudes (e.g. Fazio, 1995) or the links between attitudes and other cognitive structures. Literature pertaining to both these categorisations will be discussed. For the purposes of this discussion, the term 'internal structure' will be used to denote the structure of individual attitudes and 'external structure' to refer to systems of attitudes and other cognitive elements.
Internal Attitude Structure

Although a number of attitudinal dimensions have been identified (e.g. McGuire, 1989), most researchers focus on the evaluative dimension (e.g. Eagly & Chaiken, 1993; Fazio, 1995). Also, although individual differences in attitudes have typically been measured by placing target attitudes on a bipolar evaluative continuum, a number of structural models have been presented, namely unipolar dimensional, bipolar dimensional and non-dimensional. In addition, a number of theorists have included belief components in addition to evaluative aspects in their models of internal structure.

Dimensional Models of Attitude Structure

Dimensional models of attitude structure are not widely accepted. The assumption that people encode, store and retrieve attitude-relevant information in terms of a bipolar evaluative dimension has been endorsed, however, by a number of theorists such as Thurstone (1931) and by proponents of social judgement theory (Sherif & Hovland, 1961; Sherif, Sherif, & Nebergall, 1965).

Empirical evidence for the bi-polar evaluative schemas is provided by Judd & Kulik (1980) who found that favourable or unfavourable statements were processed more easily than neutral statements. They suggested that people holding a bi-polar schema process information that ‘fits’ it more easily than ambiguous information.

However, Eagly & Chaiken, (1993), point out that since a dimension has a middle point in addition to two ends all information located along a dimension should, in theory, ‘fit it’ equally. However, they suggest that attitude dimensions containing positions that people feel indifferent towards or that cannot readily be recognized as pro or con may be relatively unelaborated in their cognitions and so in this sense, such information would not ‘fit’ middle regions as easily as the more clearly defined end regions of the dimensions.

Other theorists (e.g. Kerlinger 1984; Luker 1984; Tourangeau, Rasinski & D’Andrade, 1991), argue that attitudinal domains are best represented by two relatively independent dimensions because people who strongly agree with statements at one end of an attitudinal continuum are often indifferent rather than opposed to, statements at the other end, which are viewed as irrelevant to their own beliefs. Support for this theory of a unipolar dimension is provided by Kristiansen & Zanna (1988) in their research examining the values that people use to justify their attitudes. For example, they found that respondents with negative and positive attitudes differed in the values that they regarded as relevant to the introduction of nuclear weapons in Canada. Respondents who favoured nuclear weapons rated
"national security" and "a comfortable life" as more relevant than did those opposed to nuclear weapons who viewed "wisdom", "salvation" and "true friendship" as most relevant.

However, it has been suggested that bipolar structures may develop in situations where groups favouring different policies are in conflict. Research for example, suggests that when people have cause to represent opposing views, they are able to access or develop appropriate cognitive structures (Eagly & Chaiken, 1993). This may also be the case for social issues that are often discussed. For example, most individuals would be able to provide arguments both for and against abortion irrespective of their personal opinions.

In addition to models of attitude structure, which assume that attitudes consist solely of an evaluation of an object stored in memory, a number of models include the beliefs that individuals hold about the attitude objects. For example, in his sociocognitive model, Pratkanis, 1989, suggests that although some attitudes may consist solely of an evaluation, such as the cultural truism, (McGuire, 1986), attitudes are often associated with elaborate knowledge structures which may contain for example, arguments for and against a given proposition, knowledge and subjective beliefs about the domain and information on how to behave toward the object. In this model, the cognitive representation of a fully developed attitude consists of three parts: an object-category, an evaluative summary of the object as well as a structure consisting of related knowledge. Pratkanis (1989) views his model as an extension of those of attitude that of Smith, Bruner, and White (1956) who distinguished between the affective tone and the information support of an attitude and more recently, Schlegel and DiTecco (1982) suggested that attitudes consist of evaluations and knowledge structures.

There are a number of theories regarding how evaluative and cognitive attitudinal components combine to form an overall attitudinal response. Some research questions the assumption that people form attitudes by aggregating their beliefs. Fishbein & Ajzen's (1975) approach treats a person's attitude at a particular point in time as a function of the beliefs that are salient or accessible at that point. Some theorists have questioned the extent to which people base their attitudes on beliefs about the specific attributes of attitude objects. Under many circumstances, people retrieve intact evaluations obviating the need to consider or review their beliefs. Rosenberg (1960) argues that most persuasion research induces changes in beliefs, which then results in a corresponding change in associated attitudes.

With respect to the dimensional models of structure discussed earlier, Schlegal and DiTecco (1982) who showed that attitudinal structures could be conveyed in a single affective response when relevant
beliefs about the attitude object are simple, their number is small and they do not contradict each other. However, if beliefs are numerous, complicated and at least partly contradictory e.g. if a person has intense personal experiences with the attitude objects, a simple evaluative response will fall short of representing the whole attitude structure.

In brief, empirical evidence in support of unidimensional or multidimensional attitude models can be considered contradictory. In practical research, however, operationalisations of attitudes following the unidimensional concept are usually preferred since they can be measured more simply and most standard attitude scales are based on the unidimensional concept.

Nondimensional Representations of Attitude Structure
The majority of attitude theorists do not discuss attitudes in terms of dimensional structure but in terms of associations between an attitude ‘object’ and beliefs, affects and behaviours. For instance, the information processing approach, which is derived from cognitive psychology, suggests a categorical rather than a dimensional analysis of attitudinal responses. The cognitions linked to the attitude are believed to have evaluative labels indicative of their favourability or unfavourability i.e. they express valence but not extremity. Consequently, unlike dimensional models, such theories suggest that no ‘evaluative continuum’ exists in the minds of individuals and it is therefore wrong to use an evaluative continuum during measurement.

For example, Fazio’s model (1986, 1989) discussed earlier can be seen as an example of such a model except that his model focuses on evaluative rather than cognitive links to the attitude object. Attitudes are said to be stored in an associative memory network in which an attitude is represented as one node and the attitude object is represented as the second node.

The Structure of Attitude Systems
Both internal and external attitude structure can be conceptualised in terms of associative memory networks. Fazio’s view of attitudes provides a well-documented associative network perspective regarding the internal structure of attitudes. Other theorists have discussed external attitudinal structure explicitly in network terms. They assume that attitudes exist in memory within a network of ‘associative links’ to other cognitive elements (e.g. Rokeach, 1967; Bern 1970; McGuire, 1989; Petty & Krosnick, 1989; Pratkanis & Greenwald 1989; Eagly & Chaiken, 1993). As a result, when an individual thinks about one attitude they may also think about another simultaneously.
In addition, Judd & Krosnick (1989) and Abelson & Rosenberg (1960), have represented attitudes as positive or negative signs attached to each attitude object. These valanced attitude objects can be regarded as nodes in a network representing relations between attitudes. To use their example, the policy of affirmative action might have positive implications for the value of equality and might have negative implications for the value of freedom.

Consistent with associative network models is the suggestion that nodes have the property of strength as well as valence. The stronger the two attitudinal nodes, the greater the probability that these attitudes will simultaneously be brought into awareness and that the attitudes are evaluatively consistent. Strength is said to reflect the frequency with which a node has been activated in the past. In an example of spreading activation between attitude nodes, Judd, Drake, Downing and Krosnick (1991) showed that answering attitude questions about one political issue (e.g. equal rights amendment) increased the accessibility of attitudes (operationalised by the latency of attitudinal response) on a related issue (e.g. nuclear weapons freeze).

Eagly & Chaiken (1993, 1998) suggest that network models are too general and limited to encompass the particular structural features of attitudes. In their discussion of inter-attitudinal structure, attitudes become linked to one another when one attitude implies another psychologically as a result of logical analyses; by observing a conjunction between two attitude objects and observations of covariation between attitudinal positions.

External structure is seen as hierarchical in the sense that more abstract and general attitudes encompass more concrete and particular attitudes. The attitude object associated with a more general attitude can be viewed as a category that contains more specific attitude objects as components. The implication is that the specific attitudes would have the same valence as the more general attitude. They suggest that the external structure of attitudes on controversial social issues may often be hierarchical in the sense that these attitudes are linked to general attitudes, which are termed ‘values’.

Rajecki (1990) provides the example of a hypothetical person with an attitude towards God, with a set of related beliefs. He supposes that (a) many people who believe in God are also active in some kind of organised religion or faith; (b) these believers presumably have a positive attitude towards their own religion; (c) since most religions preach some form of ‘brotherly love’, it is likely they have a positive attitude towards the notion of humanitarian acts. The attitude towards humanitarianism is therefore
thought to be based on this vertical structure of attitudes in a chain and since it is predicated or built upon other attitudes it is a 'higher-order' attitude.

In addition to vertical structure, Rajecelli also discusses horizontal structure. Attitudes can be anchored in more than one elaborated series of prior attitudes. With reference to the previous example, a positive attitude towards one’s country may lead to a positive attitude towards domestic aid programs and this would result in positive attitude towards humanitarian acts. As a result, an individual’s attitude towards humanitarian acts may have a number of sources. The exact nature of an attitude’s external structure has implications for attitude change, which will be discussed later.

*Attitude Systems in Relation to other Systems within the Person*

McGuire (1989) considers a more complex level of structure i.e. ‘molecular’ correspondence between attitude systems and both action and information processing. It is noteworthy that, as discussed earlier, despite being considered an aspect of attitude structure, typically, the effect of attitudes on behaviour and information processing has been represented as a consequence of attitude strength rather than a property of strength itself (e.g. Fazio, 1995, Petty & Krosnick, 1995).

Most theories of attitude change accept the one-to-one correspondence between the favourability of salient information about a topic and an individual’s evaluation of that topic for instance the Learning Theory approach (e.g. Hovland, Janis & Kelley, 1953) and Dissonance theory (Festinger, 1957). The cognitive-response approach (Petty & Cacioppo, 1986) implies high information-evaluation correspondence. However, evidence for these relationships has been ambiguous, as expressed by McGuire (1989, p.54) "Although empirical support for one-to-one molecular correspondence between information and attitudes is sad, that for correspondence between action and attitude is tragic."

The implications of attitude structure for both the measurement of attitude strength and for attitude change will be discussed later and some predictions derived from aspects of attitude structure will appear in subsequent chapters.
Traditionally, as with attitudes, values have been measured along a bi-polar evaluative continuum. If it were assumed that value structure mirrors this operational definition, values would have simple structural properties and would exist as a pro versus con dimension in individuals’ minds. However, value structure is not typically described in this way. Within the attitudinal literature, values have been described as ‘abstract attitudes’ and as such their external structure has been discussed, both implicitly and explicitly, with reference to hierarchical attitude structure. In the following section, structural models specific to values are examined, with particular emphasis on Feather’s (1990) conceptualisation of value structure, which offers an explicit account of both internal and external value structure.

In terms of individual values, for the most part, value theorists have not discussed their cognitive representation in terms of evaluative, belief, and cognitive components, but have focused on the content of each value. There is thought to be finite number of values arranged within an individual’s value system. For example, Rokeach, (1973), discussed the external hierarchical structure of values beliefs and attitudes which he argues collectively form the ‘value-attitude’ system, which is rooted within a wider belief system. Similarly, Schwartz and his colleagues (Schwartz & Bilsky, 1987, 1990; Schwartz, 1992) present a complete typology of the content domains of values which assumes that values are cognitive representations of three types of universal human requirements: biologically based needs of the organism, requirements for interpersonal coordination, and social institutional demands for group welfare and survival. They suggest that the structure of human values refers to the conceptual organisation of values on the basis of their similarities and differences.

Feather (1971, 1990), on the other hand has presented a structural theory of values (and value systems), which includes both the structure of individual values and structural links of values to other constructs within a larger cognitive system. Values are described as a type of ‘abstract structure’, an organised and relatively stable ‘residue’ or ‘summary’ of past experience. The particular value may differ structurally across individuals. It may, for example, have a restricted and undifferentiated network of associations and therefore take up a relatively minor place in the system of beliefs, attitudes and values. On the other hand it may have a much more central position. Feather proposes that, as with other cognitive structures (such as attitudes), the structural properties of values could be examined in terms of a number of dimensions such as degree of differentiation, integration, isolation and centrality.
For example, Feather (1990) proposes that 'important values' (and by implication, 'strong' values), are those which are (1) associated with strong affective reactions (either positive or negative) along a dimension of evaluation and (2) are related to their central location in the total cognitive-affective belief system and in their close links to self-conceptions. Other elements in the cognitive structure depend upon their stability. Each value can be considered an abstract structure when viewed in isolation and in addition, each person's value system or hierarchy of values can be conceptualised as a more complex type of abstract structure, one in which values are ordered along a continuum of importance for self. Values can also function as motives so that when a particular value is elicited, a value induces valences on objects and events so that these objects and events become subjectively attractive or aversive (Feather 1990, 1992). Finally, values have a normative quality about them involving what is desirable or undesirable, what ought to be preferred or not preferred. This is reflected in value definitions (e.g. Schwartz, 1996).

Feather's conceptualization of values is similar to that proposed by Eagly & Chaiken (1993, 1998) in relation to attitudes, in that it considers both internal and external aspects of values or attitudes. Like Fazio (1990, 1995), Feather discusses a link between the evaluation and the value object, which Eagly and Chaiken refer to as the intra-attitudinal. However, he also discusses links to other aspects of the molar system, as do both Rokeach (e.g. 1973) and numerous attitude theorists (e.g. Ostrom & Brock, 1968; Rokeach, 1973; Abelson, 1988; Homer & Kahle, 1988 and Eagly & Chaiken. 1993, 1998).

**Comparison Of Attitude And Value Structure: Can Values be equated with Attitudes in Terms of Structure?**

There is evidence within the literature that the evaluative component of attitudes may differ from that of values in two respects. Firstly, whereas the evaluation of an attitude object is thought to range from a highly emotional to a more elaborated cognitive response (Fazio, 1995), the evaluation of values could be regarded principally as emotive since values are believed to lack cognitive support. Individuals find it difficult to justify their endorsement of values and they are accepted unconditionally (Rokeach 1973; Feather, 1990; Seligman & Katz, 1996; Maio & Olson, 1998). In addition, although some attitude theorists argue that attitude structures are based only on an evaluative-object link (e.g. Fazio, 1995), others discuss attitude structure in terms of evaluations and beliefs (e.g. Pratkanis, 1989). However, according to Levy (1990), the expression "extent of importance" can be regarded as a cognitive assessment and he suggests that values are limited only to the cognitive modality of assessment.
Secondly, whereas the evaluative range of an attitude object is thought to range from a strongly positive orientation to a strongly negative orientation (e.g. Fazio, 1995), it is conceivable that, for values, this range is from positive to neutral since, values are by definition, generally desired and accepted unconditionally (e.g. Rokeach, 1967). This is supported by the fact that value ratings in surveys generally show a high level of item endorsement by the majority of respondents unlike attitude scales in which agreement or disagreement with the attitude items is often more variable between respondents. For example, the SVI (Schwartz, 1996; Schwartz & Bilsky, 1987) ranges from −1 (not important) to +7 (of supreme importance).

With reference to Fazio’s structural framework, if the internal structure of values were structurally identical to that of attitudes, then values would consist of a link between a ‘value object’ and an evaluation of that object. Clearly, it is more appropriate to compare value objects (e.g. social justice, equality) not to attitudes, but to attitude objects since attitude objects have been defined very broadly in the psychological literature and within the constraints of such definitions, values could, presumably, be categorised as a type of attitude object.
The internal aspects of attitude strength have provided a basis from which to design techniques for inducing attitude change. For instance, Eagly & Kulsea (1997) have suggested that persuasion techniques should provide people with a large amount of new experience (either cognitive, affective or behavioural) with the attitude object. The new associations given their recency would heavily influence the attitude and repetition of the new structural elements would increase their strength (Eagly & Kulsea, 1997). For example, communications could change such attitudes by adding new intra-attitudinal structure (such as new beliefs), but first these must be understood and recipients must engage in the favourable elaboration of their details. This is the principle on which central route processing of the Elaboration Likelihood Model (Petty & Cacioppo, 1986) is based.

Attitude structure and Attitude Change

As discussed in section 4, both the internal and external structure of attitudes have implications for attitude strength and its consequences including resistance to persuasion and influence on information processing. The structure underlying an attitude’s strength is thought to dictate the mechanisms by which attitudes are changed

Internal Attitude Structure

An attitude’s internal structure is believed to provide a counterweight against attitude discrepant information. As such this discrepant information would be less likely to result in persuasion. For example, if an attitude is grounded extensively in prior experience any new information would be averaged with this information producing a smaller alteration of the attitude’s evaluation (Eagly & Chaiken, 1993).

As well as the extensiveness of an attitude’s evaluative-object association, evaluative coherence has also been shown to be an important factor in determining resistance to change factor. For example, in respect to the three-component model of attitudes, high levels of evaluative-cognitive consistency, evaluative-affective consistency and lower levels of ambivalence have all been found to predict resistance to persuasion (Eagly & Chaiken, 1993).

In reference to models of attitude structure involving belief structures, the relation between knowledge and attitude change is complex. On the one hand, accessible knowledge about an attitude object has
been found to facilitate resistance to attitude change if used to form a defence against counter 
attitudinal information. An extensive belief structure could also enable a more critical evaluation of the 
validity of a message's arguments by facilitating more effective counter arguing (Eagly & Chaiken, 
1993). In addition, knowledgeable message recipients have been shown to process new information in 
a way that maintains their attitudes (e.g. Wood, Rhodes & Biek, 1995). On the other hand, knowledge 
may increase the ability to receive new information and to evaluate it critically (Wood & Kallgren, 
1988).

External Attitude Structure

It is generally accepted that extensive inter-attitudinal structure increases resistance to persuasion. 
Linkages to more abstract attitudes (perhaps even values), in hierarchical structures, may provide an 
active defence against attacks on a target attitude if they are used to justify maintaining the lower level 
attitude and may therefore negate the persuasive arguments (Rajecki, 1990; Eagly & Chaiken, 1998).

For example, an individual might counter an attack on recycling (as difficult and expensive) by the 
argument that recycling is necessary despite its disadvantages, in order to ensure the protection of the 
environment. Invoking the more abstract attitude (environmental protection) would obviate the need to 
counter argue the specific arguments contained in the attack on recycling (Eagly & Chaiken, 1993). In 
some cases, linkages to abstract attitudes, despite being personally significant, may not be consciously 
formulated in terms that allow them to be easily used in counter arguing. In such cases, the 
mechanisms considered by dissonance theories (Festinger, 1957) might be used to attack challenges 
to an individual's attitudes (Eagly & Chaiken, 1993). This view is inconsistent with those theorists who 
discuss how values are often used to justify attitudes (e.g. Kristiansen & Zanna, 1988).

Ostrom & Brock (1968) provided empirical evidence for these processes. Subjects indicated the extent 
to which various values were reflected in aspects of a topic. These were cues that subjects had 
previously judged as either personally important or not important. Next subjects received a counter-
attitudinal message that was highly discrepant with their attitudes. Subjects in important-value 
conditions were significantly less influenced by this message than those in unimportant-value 
conditions, suggesting that linking an attitude to important values produced attitudinal resistance.

However it is not only an attitude's hierarchical structure which is important in its resistance to change. 
This idea of both vertical (i.e. hierarchical) and horizontal structure is implied in the associative network 
models of attitude structure (see section 4). Similarly, earlier theorists discuss this inter-attitudinal
aspect of strength in their concepts of embeddedness (Scott, 1968) and the centrality of an attitude to an individual's basic concerns (Rokeach, 1968), both of which refer to the extent to which attitudes are well connected to other attitudes.

Whilst network theorists discuss the process of "spreading activation" between attitudes, other theorists have referred to this process as the "domino principle". Both illustrate the process of attitude change throughout linked cognitive structures. According to the domino principle, (e.g. Rajecki, 1990; Eagly & Chaiken, 1993) change in one element of a structure causes changes in related elements causing a possible chain reaction which may result in the restructuring of the whole set of interrelated elements. As Rajecki (1990) puts it, if an attitude were toppled experimentally, then a higher order terminal attitude should topple accordingly. Indeed, research has supported this proposition and change has been shown to reverberate through attitudinal structures that are composed of linked elements (e.g. Ball-Rokeach, Rokeach and Grube, 1984; Ostrom & Block, 1988; McGuire & McGuire 1991).

Rajecki (1990) provides the example of an attitude towards humanitarian acts that is based on a prior attitude towards religion, which in turn is based on a prior attitude towards God. He points out that it is not necessarily the case that by changing one of the two primary attitudes, the tertiary humanitarian attitude should follow. For example, the attitude towards humanitarianism acts may derive from a positive attitude towards community and towards neighbourhood organisations. Even in the event of a reversal of an attitude towards God, an attitude could be maintained by these other horizontal links. Therefore changes in a particular attitude can influence other attitudes to a varying extent, depending on their location in vertical and horizontal attitude structures.

However, Eagly and Chaiken (1995) propose that tendency for change to travel through an inter-attitudinal structure acts as an 'inertial' force that limits attitude change. They refer to the 'dampening' effect of inter-attitudinal structure, suggesting that if the psychological effort involved in changing a whole attitudinal structure is too great this produces resistance to change. An attitude that exists within a molar structure of related attitudes would require more mental effort to change as the individual would be need to consider the implications of change. As a result, although change could reverberate through such an attitude structure, this change would be slow (Eagly & Chaiken, 1995).

There is, however, as discussed in relation to hierarchical attitude structure, evidence of chain reactions occurring through linked cognitive structures. Indirect evidence for the domino principle is
provided in a study by Hendrick & Seyfried (1974), although they do not refer directly to the domino effect and are not explicit about higher order effects or structure (Rajecki, 1990). Subjects were paired on the basis of their pre-test attitudes towards the issue of subject voting in local elections. An attempt was made to persuade subjects to change their attitudes and it was found that the majority were in favour. The researchers then assessed if this new attitude influenced subsequent responses, which reflected higher order attitudes.

After post-test attitudinal measurement, subjects were asked to examine attitudinal ratings on the issue of student voting that presumably reflected the attitudes of two strangers. They had to rate which stranger was the most similar to themselves and the most attractive. In the experimental condition, one strangers' attitude was identical to their pre-test score and the other stranger to their post-test score. The test was based on the assumption that people are highly attracted to others who share their attitudes. If attraction to a stranger is based on a match between attitudes, then this liking was assumed to be a higher order effect based on prior attitudes i.e. the terminal attitude is based on prior attitudes. If a persuasive communication had really changed subjects' prior attitudes, it was predicted that a related pattern of attraction later on would be expected.

Results showed a shift in prior attitude resulted in a change in higher order attitudes. Attitude changes of experimental subjects lead to a related pattern of preferences for strangers with similar as opposed to dissimilar attitudes. This shift in attitudes for the experimental subjects could be interpreted to represent a domino effect on their subsequent higher order attitudes (Rajecki, 1990). A change in a presumably important attitude seems to have led to the outcome that related or terminal attitudes come into line. This supports the idea of structural consistency within systems of attitudes and provides evidence for the processes of change and stabilization — the domino effect — occurs across attitude domains.
Strategies for changing attitudes with strong external structure

A number of strategies for designing persuasive appeals when attitude strength is derived from its link to values have been outlined by Eagly & Chaiken (1998):

1. Invoking values commonly associated with attitudes: for example, in research on abortion attitudes towards abortion (Eagly and others 1995), the persuasive arguments were developed from those arguments most frequently used by pro-life and pro-choice groups. The pro-choice message appealed to *individual freedom* and *self-determination* and the pro-life choice appealed to *traditional family values* and *sanctity of life*.

2. Priming values for message recipients rather than referring to values directly or indirectly in persuasive communication: In research on whites' racial attitudes, Katz and Hass (1988) demonstrated that priming one of the values relevant to attitudes towards blacks caused predictable changes in attitudes towards the social group. Priming a value involved asking participants to respond to a set of items that assessed the value. These findings suggest that merely activating a value may strengthen the aspect of an attitude that is linked to the value, without the presentation of a persuasive message.
SECTION 6: MEASUREMENT

Overview: the Measurement of Attitudes and Values

It is generally acknowledged that as latent variables or hypothetical constructs, both attitudes and values are inaccessible to direct observation and must therefore, be inferred from some kind of measurable response (e.g. Van Deth & Scarbrough, 1995; Ajzen, 2000).

In the case of attitudinal measurement, there is no one interpretation of what these ‘measurable responses’ should be. As discussed earlier, research on attitude strength has identified a large number of related dimensions and the operationalisation of these variables has resulted in a plethora of measurement procedures. There has been much debate as to the relative validity of these measures.

As discussed in section 1, despite being categorised as abstract attitudes by a number of theorists, the measurement of values differs from that of attitudes in a number of ways. Unlike attitudes, individuals are believed to hold a finite number of values and as a result, scales assessing an individual’s comprehensive system of values have been developed. Although there is disagreement concerning the precise number of values in an individual value system, researchers have attempted to explain the meanings and interrelationships associated with these values. In contrast, attitude scales are only able to focus on a subset of the attitudinal domain.

Both attitude and value measurement have focused predominantly on the measurement of the evaluative dimension. Value measurement has, however, been restricted to direct self-report techniques. Examining the items used for research on values shows that the range of these items is usually ordered from positive to negative, but since values are defined as desirable and universally accepted, the response formats are often positively skewed. For example, in the Schwartz Value Inventory (e.g. Schwartz & Bilsky, 1990), value ratings range from −1 (not important) to +7 (of supreme importance). This would be an example of a unipolar scale as long as the ‘strongly opposed’ option was ignored. There is also a special emphasis on the concept of importance in value assessment compared to an emphasis on the extent of agreement in attitude measurement.

The following review firstly examines the measurement of attitudes. The interdependence of attitude theory and measurement will then be discussed followed by an evaluation of the validity of attitude
measures. The measurement of values will then be reviewed with emphasis on the Schwartz Value Inventory (Schwartz, 1996; Schwartz & Bilsky, 1987).

**Attitude Measurement**

In order to measure attitudes, due to their abstract nature, an attitudinal indicator must firstly be found. Most attitude measurement techniques are based on the assumption that attitudes can be measured by indexing the opinions or beliefs that individuals hold about attitude objects (e.g. Thurstone, 1931; Likert, 1932). Direct and indirect methods have been developed. The former involves the subject giving some kind of self-description. With indirect techniques, such as response latency discussed below, attitudes are measured without the individual's awareness and are thought to be less susceptible to self-presentational motives (Strahlberg & Frey, 1988).

**The Measurement of Attitude Accessibility**

Attitude accessibility has been measured by two methods: (1) self-report and (2) response latency. Although no direct self-report measures of attitude accessibility have been used (e.g. "How easily or quickly does your attitude come to mind when you encounter attitude object X?"), some indirect measures have been developed which ask people how often they think or talk about the attitude object, assuming that the more accessible the attitude is, the more an individual will report thinking or talking about it (Brown, 1974).

Fazio and his associates (Fazio et al, 1982; Powell & Fazio, 1984) have operationalised response latency as the amount of time between the presentation of an attitude object and the individual's reported evaluation of it (Fazio, et al, 1982). This response latency is typically assessed with a computer that times the delay between evaluations of the object by pressing a computer key (Fazio, 1986). To reduce variability in response-time data, various precautions can be taken: instructing research participants to respond as quickly and accurately as possible; including practice trials to familiarize participants with the task; using filler trials so that data adjustments can be made; and using a two-alternative response framework (e.g. Yes/no, like/dislike, Fazio, 1990).

Attitude accessibility can also be manipulated. Manipulations typically involve having the respondents express the attitude(s) repeatedly since recent and frequent expressions of the attitude cause it to be activated more rapidly afterwards (Fazio et al, 1982; Powell & Fazio, 1984; Houston & Fazio, 1989). The more often an attitude is expressed, the more accessible it becomes. Consequently, some
researchers have asked people to copy their attitudinal responses several times on a number of identical response scales (e.g. Fazio et al, 1982).

The Interdependence of Attitude Theory and Measurement

The relationship between attitude theory and measurement is bi-directional and “advances in one contribute to (and benefit from) advances in the other” (Ostrom, 1989, p.11). Research into new attitudinal phenomena has progressed alongside the development of new measurement techniques. Ostrom (1989) discusses two main developments. Firstly, early attitude theorists such as Thurstone (1928), concentrated research solely on the evaluative dimension of attitudes. However, the later development of multidimensional techniques such as factor analysis and multidimensional scaling resulted in a conceptual shift, directing research towards a greater range of attitudinal dimensions. Secondly, by the 1960’s, the use of Fisher’s analysis of variance approach had encouraged the use of experimental studies which enabled the generation and testing of causal predictions from attitude theory.

In the same way that new measurement techniques have drawn attention to new attitudinal phenomena, attitude theory has supplied a ‘conceptual language’, which has guided the interpretation of empirical results (Ostrom, 1989), for example, by specifying the germane attitudinal properties and suggesting which responses need to be observed. The majority of attitude measures are based on the dominant unidimensional conceptualisation of attitudes discussed earlier and therefore measure positive or negative evaluations of the attitude object.

However, some theorists have examined attitudinal properties other than the evaluative and have examined the more heterogeneous set of cognitive reactions evoked in persuasion settings (c.f. Petty, Ostrom & Brock, 1981; Petty & Cacioppo, 1986). Semantic differential scales enable researchers to assess responses to an attitude object on a number of different dimensions. Individuals rate attitude objects on a number of bipolar scales assessing 3 dimensions: evaluative (good/bad), potency (e.g. strong/weak), and activity (e.g. fast/slow).

The specific attitudinal definitions adopted have determined which attitudinal responses are measured. For example, the cognitive view of attitudes requires the sampling of thoughts and beliefs held about the attitude object i.e. attitude-relevant thoughts (Greenwald, 1968; Petty, Ostrom & Brock, 1981; Petty & Cacioppo, 1986). People are asked to list all of the thoughts, however relevant, they have
about the attitude object after they were exposed to a persuasive communication. The index of overall attitude is derived from judgments of how positive or how negative each of the thoughts is. Other theories require focus on different subcategories of content e.g. the functional theories.

The Validity of Attitude Strength Measures

Related to the discussion in section 2 concerning whether properties of strength reflect single or multiple constructs, a recent and ongoing debate concerns the validity of measures associated with particular strength variables. Whilst a number of theorists (Petty & Krosnick, 1995; Eagly & Chaiken, 1998) discuss the "subjective" nature of attitude properties, in a similar vein, Bassili (1996) distinguishes between two ‘indexes’ of attitude strength on which attitude measures are based:

- Meta-attitudinal: these are based on respondents’ impressions of their own attitudes
- Operative: these are linked to the cognitive representations and information processing that is linked to judgment processes that produce attitudinal responding, or the retrieval of information, which is the product of such processes.

It is supposed that operative measures provide a relatively non-reactive (and possibly unconscious) means of assessing properties of strength. In contrast, meta-attitudinal measures rely on respondents’ memorial information that, it is claimed, may not be available or accessible for examination. As a result, meta-attitudinal measures may be susceptible to other contextual influences, which are irrelevant to attitude strength (Greenwald & Banaji, 1995).

Operative Measures

For example, response latency is considered an operative measure of strength since it assesses the process of attitude activation. This measure of attitude strength is taken unobtrusively whilst the subject’s attention is focused expressing their opinion (Fazio, 1995). Attitude extremity and ambivalence can also be measured operatively. Extremity is measured by calculating the polarization of participants’ responses to an attitudinal enquiry and ambivalence, by assessing the amount of conflict revealed by their answers to questions assessing positive and negative feelings towards an attitude object. Based on the output of judgmental processes which are derived from information assumed to be stored in memory, the valence of the summary evaluation (extremity) and the valences of positive and negative aspects (ambivalence), can be calculated (Bassili, 1996).
Elaboration can also be regarded as an operative measure of attitude strength. It is defined as the extent to which an individual has carefully scrutinised and thought about the merits of information relevant to the attitude object (Wegener et al., 1995). It can be assessed by asking respondents to list thoughts that come to mind as a result of a persuasive communication. The content of these thoughts are then categorised e.g. thoughts favourable, or neutral toward the persuasive message (Cacioppo, Harkins, & Petty, 1981) and counted (e.g. Burnkrant & Howard, 1984), with greater elaboration being indicated by a larger number of generated thoughts.

**Meta-attitudinal Measures**

By contrast, self-reports of attitude certainty, importance, strength of feeling, frequency of thought, attentiveness to the issue and knowledge are all considered meta-attitudinal. Bassili (1996) argues that it is doubtful whether individuals normally save complex 'summary assessments' of such information in memory for all except the most familiar of attitude objects. It is argued that evaluations form the foundation of attitudes but properties of strength are secondary to them.

As a result, self-report measures of such properties may not produce valid measures since they are assumed to be neither represented with the attitude object in memory nor easily derived from the cognitive processes that bring about attitudinal judgments. They are 'second order' judgments and require a level of 'intrapsychic awareness' people rarely have (Bassili, 1996). When reporting on such attitudinal properties, respondents may base their responses on environmental information to help them give credible answers. For example, the reported importance of an issue may be based on past behaviour and when reporting certainty, respondents may maintain that their attitudes have changed in order to convey their 'open-mindedness' (Bassili, 1996).

All measures which are based on self-descriptions start from the assumption that the individual who responds is able and motivated to disclose their true attitudes. However, there is a lot of evidence that there are tendencies to attitude misrepresentation e.g. tendencies to give socially desirable answers because self-evaluation data can be easily falsified, and are susceptible to impression management motives.

Evidence for the lack of direct access to meta-attitudinal attitude properties is provided by a number of studies which have found that it is the result of thinking, not the process, which appears in consciousness (Bassili, 1996). For example, Wilson et al. (1989) found a discrepancy between the actual causes of people's attitudes and their verbalised reasons for them. Greenwald & Banaji (1995),
in discussing 'meta-attitudinal' measures suggest that resulting attitudes are 'implicit' and result from unrecognised aspects of past experience.

In addition, Ostrom (1989) has questioned whether individuals are able to locate their attitudes as a point on an evaluative subjective continuum as is required in self-reports. Individuals may reduce possible ratings into a small number of basic response categories such as “favourable toward the object”, “unfavourable toward the object”, and “undecided”. The category that most is most representative of individuals’ current thoughts would be then be selected. Individuals may be indifferent as to which specific point is marked as long as it is the corresponding portion of the scale that coincides with their chosen category.

**Empirical Evidence Supporting the Advantages of Operational Measures.**

Bassili's (1996) hypothesis concerning the relative strength of operative, compared to meta-attitudinal measures, has received empirical support in a number of studies. Recent studies have illustrated the power of response latency in indexing attitude strength compared with meta-attitudinal measures. Bassili (1995) conducted a study of the 1990 Ontario election. Individuals' response latencies to a question concerning their voting intentions (an operative measure of strength) were compared to responses to a question concerning the finality of this voting choice (a meta-attitudinal measure) and the former was found to be a better predictor of voting behaviour.

Roese & Olson (1994) also found that repeated attitudinal expression produced faster response latencies as well as enhanced ratings of the importance of the target issues. However, the effect of repeated expression on latencies remained reliable when the effect of importance was controlled for, suggesting that individuals use attitude accessibility as a heuristic cue for inferring attitude importance i.e. meta-attitudinal judgments sometimes may be based on operative properties of the attitude. When attitude accessibility was increased by experimental manipulation, there was a resultant increase in subjects’ judgments of the importance of the attitude issue.

In another study by Bassili (1996), respondents were interviewed using a computer assisted telephone interview, which allowed for the measurement of response latencies. Questions were asked on a number of controversial issues and participants were then asked to consider a negative consequence of their expressed view in order to assess attitude pliability and attitude stability. Factor analysis revealed that meta-attitudinal and operative measures fell on two distinct factors among measures of attitude strength with meta-attitudinal measures being less powerful, more erratic and showing less
predictive validity than operative measures. Among operative measures, response latency was more effective than extremity and ambivalence in accounting for opinion pliability and stability. It was concluded, “response latency constitutes one of the purest implicit measures of attitude strength presently available to researchers” (Bassili, 1996, p.649).

**Future Research Concerning Attitudinal Properties**

A number of theorists have attempted to categorise meta-attitudinal and operative measures on a smaller number of dimensions. For example, Pomerantz, Chaiken, & Tordesillas (1995) in a factor analysis of self-report strength measures revealed two items reflecting embeddedness and items reflecting commitment. Erber, Hodges & Wilson (1995) distinguish between ‘operative’ measures that assess the consistency of people’s database and those that assess the strength and accessibility of people’s general evaluation of the attitude object - i.e. a dichotomy among sets of measures that are predominantly operative. However, the extent to which such labelling is theoretically informative or of practical use is questionable. Rather than simplifying the conceptualisation of attitude strength, the comprehension of strength components appears to remain as complex as ever.

However, there does appear to be a general consensus concerning the relative advantages of operative over meta-attitudinal measures. Greenwald & Banaji, (1995), urge researchers to place more emphasis on such ‘indirect measures’ of social constructs i.e. those often mediated by ‘implicit unconscious processes’. Measures based on participant’s direct appraisal of such processes (i.e. meta-attitudinal measures) have been found to “miss the mark by dramatic margins” (Bassili, 1996, p.637).

It should be noted that although a number of strength properties are routinely associated with meta-attitudinal measurement, the distinction between operative and meta-attitudinal measures has been found to result from the method of measurement rather than the specific property being measured. Bassili (1996) found that properties measured in both meta-attitudinal and operative ways were not highly correlated. In principle, all properties of strength that can be measured using operative measures can also be measured using meta-attitudinal measures by asking respondents to report their subjective impressions of psychological processes. However, many properties e.g. certainty, or importance, however, are inherently subjective and can only be measured meta-attitudinally.

For a number of strength variables, the option of operative rather than self-report measurement is becoming increasingly available. Furthermore, research such as that described above shows that it is
not that meta-attitudinal measures are unrelated to properties of attitude strength, but that they are less powerful and more erratic (Bassili, 1996). Furthermore, all meta-attitudinal measures may not be ‘subjective’ to the same extent (Bassili, 1996). For example, there is face-validity in the link between certainty and attitude stability and research has demonstrated the power of self-reports of certainty in predicting this attitudinal consequence (Bassili 1996), as well as their correlation with operative measures tapping the same property. Survey research is easy to understand and information on a complicated attitudinal property can be accessed by one question. For this reason survey research will, no doubt, continue to be a popular technique in attitude measurement.

**Value Measurement within Social Psychology**

Whilst some value programs have focused on the values of cultures (Kluckhohn, 1951; Hofstede, 1980; Schwartz, 1992) others have focused on the values of individuals (e.g. Morris, 1956; Rokeach, 1973; Feather, 1975; Schwartz, 1992). There is also a split between those scales which measure general values, and those related to specific groups of values or values in a particular context. The following section will focus on those scales relating to the measurement of individual value systems.

**The Measurement of Personal Value Systems**

Up until the 1960’s value measurement was beset by a lack of consensus regarding value definition and more fundamentally, debate about the empirical feasibility of the construct. This disagreement was reflected in divergent operationalisations of the values concept (Braithwaite & Scott, 1991). However, research by Rokeach (1968, 1973) provided a conceptual and operational ‘synergy’ that had been lacking (Braithwaite & Scott, 1991, p.690).

The Rokeach Values Survey or RVS (Rokeach, 1967) consisted of what was supposed to be a comprehensive list of 18 terminal (preferred end-states of existence) and 18 instrumental (preferred modes of conduct) values. Respondents are required to rank-order the values in each list (which were printed on moveable gummed labels) according to how important they feel the values are as guiding principles in their lives. The result was thought to reflect an individual’s value system. The RVS was by far the most popular values scale of the 1970’s and 1980’s and is still used extensively 30 years later by researchers in a number of disciplines.

Despite its widespread popularity, the RVS has been criticised on a number of grounds. These criticisms include the adequacy of the item sampling, the use of the ranking techniques and most
frequently, its use of single-item measures. Although single-item measures are more efficient in terms of time and convenience, it is well established that constructs are best measured using multiple-items in order to calculate internal consistency and therefore estimate the error present in the measure. The ranking task is demanding for subjects and limits the range of statistical techniques that can be used for data-analysis. Ranking may also result in ipsativity (nonindependence) of the data (e.g. Braithwaite & Law, 1985; Schwartz & Bilsky, 1987; 1990). However, Rokeach defended the use of the rank-order procedure by claiming it was necessary in order to capture adequately the idea of relative importance of values. Braithwaite & Law (1985) also suggest that an understanding of the influence of values on behaviour may depend on knowledge of people's ability to assign priorities to their values. Finally, the RVS has been criticised for being applicable primarily to Western culture (Braithwaite & Scott, 1991).

Despite these criticisms, value scales developed since Rokeach's work have frequently been based on the RVS. For example, the List of Values (Kahle et al, 1986) was based partly on Rokeach's work and Schwartz and his colleagues (Schwartz, 1996; Schwartz & Bilsky, 1987) developed a model for the organisation of value-systems and a related values-measurement instrument, and the Schwartz Value Inventory or SVI, which originally drew heavily upon the RVS. The SVI, however, developed Rokeach's definition of values both conceptually and methodologically and subsequent revisions and extensions have moved it gradually further away. The SVI is based on the RVS both for 21 of its specific values and for its phrasing of values as guiding principles in one's life. However, it includes values taken from the full range of Eastern and Western cultures, and the values are systematically sampled to measure ten value types. The current inventory has a larger number of items, increased from 36 to 56 and no longer distinguishes between instrumental and terminal values. Also subjects are required to rate rather than rank the values and it is a multi-item measure and has been shown to be a cross-culturally valid measurement scale. The details of the theory and the related measurement scale are examined below.

*The Schwartz Value Inventory* (Schwartz & Bilsky, 1987; 1990): Overview

Values are defined as: "desirable, trans-situational goals, varying in importance, that serve as guiding principles in people's lives." (Schwartz, 1996, p.2). Values are categorised according to the type of motivational goal they represent. It is assumed that values represent, in the form of conscious goals, three universal 'requirements of human existence' and are therefore present in every culture. These requirements are; (1) biological needs, (2) requirements of coordinated social interaction and (3)
survival and welfare needs of groups. These goals are represented cognitively as specific values and are used to 'explain, coordinate and rationalise behaviour' (Schwartz, 1996, p.2).

This results in ten motivationally different value types. For example, the motivational type of "conformity" is derived from the prerequisite of "smooth interaction" and "group survival" - individuals inhibit actions that might hurt others. Each value type is defined in terms of its central goal and specific single values that represent it. Classification of these values into domains is important both theoretically and also for measurement since it can help avoid the low reliability inherent in the measurement of single values.

![Diagram of value system structure](image.png)

Figure 1: The prototypical structure of value systems (taken from Schwartz, 1996).

Actions taken in the pursuit of each value type have psychological, practical and social consequences that may conflict with or be compatible with the pursuit of others. This pattern of relations is thought to result in a circular structure of value systems in which values from each type are located in a separate wedge-like region (see Figure 1 above). Competing value types lie in opposing directions from the centre and such motivational goals cannot easily be pursued at the same time e.g. pursuing achievement values may conflict with pursuing benevolence values. In contrast, types whose values may be attained simultaneously are in close proximity. Adjacent value types share motivational
orientations and form a motivational continuum around the circular value structure e.g. achievement and hedonism both express self-centeredness. Hedonism and stimulation both entail a desire for affectively pleasant arousal.

Two major value conflicts have been identified. Opposite quadrants of the circle represent a more general level of organization with two underlying dimensions: (1) Openness to Change (self-direction, stimulation) conflicts with Conservation (security, conformity, and tradition); (2) Self-Transcendence (benevolence, universalism) conflicts with Self-Enhancement (power, achievement). The motivational types are split between these four quadrants but the motivational type hedonism shares aspects of both Openness and Self-Enhancement. Individuals order values hierarchically according to their importance as guiding principles in their lives. It is by making choices among competing values that people form an integrated structure of value priorities (Schwartz, 1996). The view of values as integrated structures allows the generation of systematic, coherent hypotheses regarding the relations of value priorities to other variables:

1. Any outside variable tends to be associated similarly with value types that are adjacent in the value structure.
2. These associations decrease moving around the circular structure in both directions.

**Evaluation of the S.V.I**

There are a number of criteria by which measurement scales can be evaluated including reliability, validity and item sampling and empirical evidence. Because each value type of the SVI (e.g. achievement), is measured by several value items (ambitious, influential, capable, successful) that converge on theoretical meaning, this results in a reliable and valid measure of the construct. In terms of internal consistency the scales have been found to be very reliable, ranging from .70 to .90 and exceeding .80 for most scales (Schmitt et al 1993). The test-retest reliability of the scale is also acceptable, with scales correlating more than .5 across a period (Schmitt et al, 1993). However, Schmitt et al point out that an individual's values should be measured on more than one occasion to account for potentially confounding state and trait-interaction factors. A considerable body of evidence has also built up in relation to the cross-cultural validity of the theory (e.g. Schwartz 1994).

A number of potentially problematic issues can be identified in Schwartz's work. Firstly, Schwartz (1996) states that it is in the presence of conflict that values are likely to be activated, enter awareness, and to be used as guiding principles. However, Schwartz does not appear to address this issue in his value measure. During completion of the S.V.I., participants need not make any trade-offs.
in order to rate the individual values. If Schwartz’s point were accepted it would suggest that the rating of values in the abstract, as with the SVI, might be effectively meaningless since, Schwartz (1996) suggests that without value conflict, no attention may be given to values and individuals may act in terms of routine scripts.

Secondly, Schwartz (1996) suggests that respondents must first be asked to read through all values and to choose the most and least important before rating the values. This is done in order to generate top and bottom anchoring points. The rationale is that if respondents begin to rate the values directly, they tend to change their use of the importance scale as they proceed which causes artefactual effects of item order. However, asking respondents to essentially complete the scale twice is a demanding task for a scale containing 56 items and may result in participant boredom or fatigue.

Thirdly, Schwartz proposes guidelines to discard data if subjects score too many maximum values. Respondents who mark values as being of “supreme importance” too many times (21 times among 56 values) are dropped before analysis. Since “supreme” means that the value takes precedence over virtually all others it is assumed that they are either unwilling or unable to consider their value priorities seriously enough to describe them accurately. Wood (1999) suggests that these rules are ‘arbitrary’ and it is not clear why these criteria are selected especially considering that respondents are instructed that the rating of 7 is ordinarily used for no more than two values.

However, the SVI whilst being similar in many ways to the RVS, avoids its major criticisms. In addition, it has the advantage of a strong theoretical base and is amenable to stronger statistical analysis. Reflecting these benefits, the SVI has received little criticism in the psychological literature.
The central research problem of the present thesis can be seen as important on both theoretical and practical grounds. Both attitudes and values are accepted as important concepts within the social sciences in general and social and cognitive psychology in particular. The recognition of similarities between conceptualisations of values and attitudes suggests that the application of attitudinal research to the value domain may be justified. Whereas value research has focused largely on content, attitude research has involved the analyses of psychological processes (Eagly & Chaiken, 1992), specifically attitude change. The application of such these findings to the value domain would be beneficial since values research is relatively less grounded in theory (Levy, 1990). Likewise, Dose (1997) suggested that attitude research should be applied directly to values and it would provide what is lacking in value research.

Compared to attitudes, the psychology of values appears to be a relatively under-researched topic despite being a component in the explanations of thought and behaviour (Feather, 1990). Irrespective of values' disputed status as attitudes, value theorists have argued for the importance of research on values as distinct constructs. Individuals are supposed to have fewer values than attitudes, making them a more 'economical concept' (Rokeach, 1968). It is possible, therefore, to assess individuals' total value structure by using comprehensive scales such as the SVI (Schwartz, 1990), whereas given that individuals have 'tens of thousands' of attitudes (Rokeach, 1968) a comprehensive measurement would be unfeasible. Values are regarded as more holding a more central position in the individual's cognitive system (Rokeach, 1968), they are 'higher' rather than 'lower level' concepts (Eagly & Chaiken, 1998). They are also regarded as being more closely linked to personality and motivation (Rokeach, 1967).

A number of theorists have suggested that attitude importance is a consequence of attitude accessibility (e.g. Fazio, 1995). The broad definition of attitude object means that a value item can be conceptualised as an attitude object. An evaluation is made with respect to some entity or thing that is the object of the evaluation i.e. attitude object. Virtually anything that is discriminated can be evaluated and therefore function as an attitude object (e.g. abstract ones (liberalism, secular, and humanism) i.e. political ideology. This suggests that values can be attitude objects — so values/labels themselves are not attitudes but attitudes can be had about the values.
Firstly, a conceptual framework of attitudes (e.g. Fazio et al, 1982) is extended to explicitly include values as abstract attitude objects, suggesting that the internal structure of values consists of ‘value object’-evaluation associations in memory. In this conceptualisation, what Schwartz (1996) refers to as values, i.e. the transitiational goals such as happiness, would be ‘value objects’ i.e. the equivalent of attitude objects about which an individual expresses an evaluation which, in the case of the SVI (e.g. Schwartz & Bilsky, 1990), is its importance as a ‘guiding principle’ in an individual’s life. This enables the measurement of values using response latency techniques. To date, response latency measurement has been used exclusively to measure attitude accessibility (with the exception of Gilchrist’s unpublished dissertation in 1996). Gilchrist found response latency to be a reliable and valid measure of value importance. This finding suggests that a network of values may exist in memory analogous to that of attitudes and that the principles of Fazio’s model could be applicable within the domain of values.

There are a number of advantages to be gained from the application of response latency measurement to the value domain. Response latency would provide an additional measure of value strength, one which is considered to be more objective and valid than many self-report measures and has been called “one of the purest implicit measures of attitude strength available to researchers” (Greenwald & Banaji, 1995). It would also provide insight into an additional dimension of value strength. Whereas attitudinal research has identified a large number of strength dimensions (see section 2), value research has been restricted primarily to the dimension of value importance.

Theoretically, the validity of response latency as a measure of value strength would provide indirect evidence regarding the structural properties of values, specifically that the structural object-evaluation representation proposed by Fazio is true for both values and attitude objects i.e. that a network of values may exist in memory analogous to that of attitudes. At present there is considerable disagreement and confusion in the literature as to the exact nature of attitudes and values. Value structure has mainly been addressed with reference to inter-attitudinal structure and little empirical research has focused on the internal structure of values.

A second theme of the present thesis involves value strength derived from the structural relationship between values and attitudes. This strength is thought to represent a further source of value accessibility since in addition to the activation of the evaluative-object link; a value could be accessed by the activation of a related cognitive structure. Raising the accessibility of values through related expression was therefore assumed to raise the accessibility of a related attitude. It is assumed that
activating a value would facilitate the retrieval (and accessibility) of related attitude as the activation process spreads throughout the associative network

Such a conceptualisation of values would also suggest that the same principles of Fazio's (1986) model could be applicable to the domain of values i.e. that values which are highly accessible from memory are likely to guide processing of relevant information and attitudinal judgements than less accessible, weaker values. Potentially, response latency could provide a measure of value strength, which is superior to conventional self-report measures, offering a less biased and more direct measure of an individual's true values.

The implication of this conceptualisation is that values should behave in a similar way to attitudes in the persuasion context. It is probable that in the same way as attitude accessibility has been shown to determine the elaboration of persuasive messages (cf. Fabrigar et al., 1998), so too would value accessibility determine message elaboration since values are structurally comparable to attitudes.

Overview of Thesis

This thesis examines the conceptualisation and measurement of value strength. More specifically, the structural dimension of value strength is examined, namely value accessibility. The central question of this thesis is "Are structural models of attitude strength (e.g. Eagly & Chaiken, 1993; Fazio 1995) applicable to the analysis of value strength?" Five studies are reported which address questions concerning the nature of value accessibility, its measurement, the influence of value accessibility on the value-attitude relationship and its implications for attitude change.

This question will be addressed firstly, within the conceptual framework of Fazio (1986) since this has provided both a structural definition of attitude strength and a related measurement technique, which could be extrapolated to the assessment of value strength. It is assumed that values have the same structural characteristics as attitudes i.e. they exist in an associative network consisting of a link between an object and an evaluation of that object. This narrow definition of value is chosen for a number of reasons: it is compatible with the general conceptualisation of values as evaluative tendencies, as suggested by measurement techniques; it bases the concept within a specific theoretical tradition and as a result, response latency could be used to index the strength of this association i.e. value accessibility.
Secondly, the external structure of values is considered and its relation to value strength and specifically value accessibility. Thirdly the mechanism by which value accessibility influences related attitudes is examined. Value accessibility is experimentally manipulated in two experiments designed to analyse whether increasing the accessibility of a primed value leads to the increased elaboration of persuasive arguments, indexed by the effect of argument quality.
In selecting an appropriate values measure, fifteen value scales reviewed by Braithaite and Scott (1991) were considered, as well as a number of more recent scales, (Triandis, 1972); Hofstede, (1980), Inglehart (1977) and Schwartz (1996). In addition to acceptable reliability and validity, the nature of the research problem generated additional requirements which restricted the range of suitable scales. The SVI, (Schwartz, 1996) was selected as the most appropriate scale for use in the current research. Reasons for this choice are discussed below.

Firstly, so as to avoid limiting the generalisability of the research findings, a scale based on a broad conceptualisation of an individual’s value domain was seen as desirable. Measures of specific values were therefore ignored. Examples of such specific measures include materialist-postmaterialist goals (Inglehart, 1971, 1977); altruism (Rushton, Chrisjohn, & Fekken, 1981); the Personal Values Scale (Scott 1965), which is restricted in scope to interpersonal values and the Morally Debatable Behaviours Scale (Harding & Philips, 1986). Measures that focused on values in specific contexts such as work values (Hofstede, 1980) were also considered too restricted and were therefore discarded.

In contrast to these scales, the items of the SVI are based on a broad conceptualisation of the value domain. Although it is noted by Schwartz (1996) that it may be useful to add values of special relevance when studying a particular topic, the 56 value items contained within the ten value types of the SVI are believed to be comprehensive. Indeed, it was found that when researchers from a number of countries added what they considered to be missing values, these values were found to be ‘exemplars’ of the existing value types (Schwartz and Sagiv, 1995). An examination of the current social science journals, to date, does not reveal any empirical evidence to negate Schwartz’s claims. It is assumed therefore that choice of the SVI for the current research would not delimit the range of values to which the research findings could be applied.

The Rokeach Value Survey (or RVS) (Rokeach, 1967) was rejected due to a number of criticisms that have been raised against it. For example the RVS is among a limited number of scales based on single-item measurement. Although single-item measures are more efficient in terms of time and convenience, it is well established that constructs are best measured using multiple-items in order to calculate internal consistency and therefore estimate measurement error (Braithewaite & Scott, 1991).
As discussed above, in the SVI each value type (e.g. *achievement*) is measured by several value items (ambitious, influential, capable, successful) that converge on theoretical meaning, whilst diverging on relevant aspects that are being unavoidably assessed. Five items that tap different aspects of *equality*, for example, provide a clearer basis for interpretation than one item since it provides respondents with more than one chance to communicate their views and several sources of data are available on which to rely when interpreting the results (Fazio, 1995).

It was also considered desirable to use a values measure which was well grounded in theory. Spates (1983) suggests that there has been a ‘dearth’ of theory to guide value research, but since Rokeach, many value scales have been guided by psychological theory. For example, Inglehart’s materialist-postmaterialist value dimension (1971, 1977) provides a conceptualisation of values based on Maslow’s (1962), theory of human needs. However, this scale was not considered amenable to response latency measurement.

As discussed in chapter 1, response latency is assessed with a computer, which times the delay between presentation of the attitude object, and the moment the subject provides an evaluation of the object by pressing a computer key (Fazio, 1986). In order to reduce variability in response-time data, research participants are instructed to respond as quickly and as accurately as possible. Although the effect of word length can be partialled out, brief scales can be regarded as preferable since word length could produce less of a confounding effect due to individual differences in reading speed.

Inglehart’s materialism-postmaterialism dimension measure involves the ranking of twelve national policy objectives. The ranking procedure meant that respondents’ latencies to respond to a particular item would be unlikely to reflect value strength since ranking is known to be a time-consuming and demanding task. The Empirically Derived Value Construction scale (Gorlow & Noll, 1967) was similar to the SVI in a number of ways but consisted of 139 values, which needed to be compiled into 13 piles and then ranked from the lowest to the highest valued item. The length of both these scales was not seen as appropriate for response latency measurement. The SVI was, however, conceptually simple and not too demanding. Although the original measure contains 56 items, a brief version of the SVI, containing four, three item scales have been developed by Stern, Dietz and Guagnano (1998) and it was found to have acceptable reliability and validity.
Many early measures in the 1960's were rejected since they were not compatible with the dominant conceptualisation of values as “notions of the desirable”. Using a scale dominant with the current interpretation of values would increase the applicability of the results to contemporary research. There is considerable diversity of criteria incorporated into the instructions given to those responding to value scales and the value construct has frequently been operationalised in a way that is not necessarily consistent with the conceptions of the desirable. Judgments have been made in terms of preference, agreement, importance, goodness, justifiability, importance as guiding principles, and consistent admiration (Braithwaite & Scott, 1991). Empirical research is needed in order to determine if these dimensions can be regarded as synonymous.

A difficulty of value operationalisation identified by Braithwaite and Scott (1991), concerns the appropriate level of abstraction for item sampling. Values are widely accepted as general rather than specific. However, as Braithwaite and Scott (1991) point out, it is unclear whether values should be inferred from responses to specific attitude statements or more directly from general orienting responses i.e. “at what point on the specific-general continuum did attitudes become values?”. Bearing this in mind, one of the aims of the present research involved testing the reliability and validity of using response latency measures to test value strength. For this reason, it was considered important to use scale items, which were clearly identifiable as values.

For the present thesis the value items needed to be presented therefore as abstract concepts. A number of scales used value items, which were ambiguous in terms of their distinction from attitudes. For example, the Value Profile (Bales & Couch, 1969) consists of a series of general statements expressing opinions e.g. “Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down”. Such items appear to be more representative of an attitude that implicates a value. The Values Orientations Scale (Kluckhohn & Strodtbeck, 1961) measures orientations of respondents towards four dilemmas. Apart from being lengthy and therefore not ideal for use in response latency measurement, again, the values are not measured directly.

An additional advantage of using the SVI is that it requires subjects to make judgments on the basis of rating values, rather than ranking them. Ranking measures are not amenable to response latency measurement. Also, if values are rated they can be measured at the interval level rather than the ordinal level and this, which enables the use of more powerful and advanced techniques of causal analyses. In conclusion, the SVI was selected for the present research because it represents a
parsimonious and well-defined scale with a comprehensive list of value items, which is suitable for use in response latency measurement.

STUDY 1

Introduction

A general definition of values provided by Schwartz & Bilsky (1987), outlines their five main features. Values are; (a) concepts or beliefs (b) about desirable end states or behaviours (c) that transcend specific situations, (d) guide the selection or evaluation of behaviour and events, and (e) are ordered by relative importance. This definition includes most of the value features emphasised by different value researchers within social psychology.

However, this definition reveals little about the representational structure of individual values. Both Schwartz and his co-workers (e.g. Schwartz, 1992; Schwartz & Bilsky, 1987, 1990) and Rokeach (1967, 1973) discuss the content of value systems and hierarchical links between values and other cognitive structures within such systems. One exception is the work of Feather (1990), who refers explicitly to the internal structure of values. As well as proposing that ‘important values’ (and by implication, ‘strong’ values), are those which occupy a central location in the total cognitive-affective belief system with close links to self-conceptions, Feather suggests that strong values also those associated with strong affective reactions (either positive or negative) along a dimension of evaluation.

This latter conceptualisation resembles that of Eagly & Chaiken (1993, 1998) with regard to attitude strength. This suggests that attitudes can be formed experientially, by cognitive, affective or behavioural responding to an attitude object. Information produced by these responses is stored as mental associations between the attitude object and prior experiences/responses.

Similarly, Fazio (1986, 1989) defines an attitude as an association, in memory, between an attitude object and an evaluation of that object. Attitudes are said to be stored in an associative memory network. Although Fazio does not refer to values explicitly, he does present a broad conceptualisation of attitude objects, which could include values as ‘abstract objects’.

Since values are accepted as hypothetical constructs, they are not directly observable (Ajzen, 2000). A frequent issue acknowledged by researchers concerns whether they can be verbalised and therefore
made accessible for measurement. Values have usually been assessed using inventories where respondents rank or rate values according to their relative importance. The accuracy of such measurement has been the subject of much debate. For example, Bassili (1996) suggests that such self-report measures may lack validity since individuals’ assessments of value importance are unlikely to be represented along with the value in memory.

In addition, Ostrom (1989) has questioned whether individuals are able to locate their attitudes as a point on an evaluative subjective continuum as is required in self-reports - they may be indifferent as to which specific point is marked as long as it is the corresponding portion of the scale that coincides with their self-assigned category. As a result respondents may base their responses on other information such as past behaviour. Furthermore, self-report measures assume that the respondent is motivated to disclose their true values; social desirability pressures and falsification may influence ratings. The measurement of value accessibility as an indicator of value strength could help overcome such measurement problems.

According to Fazio’s (1995), conceptualisation, an attitude is defined as an association in memory between an attitude object and a summary of that evaluation of that object. Feather’s, (1990) structural representation of values as associations with strong affective reactions, is compatible with this idea of associative strength. In fact, Feather (1990) proposes that, as with other cognitive structures, the structural properties of values could be examined in terms of a number of strength dimensions. However, the examples he provides, such as degree of differentiation, integration, isolation and centrality seem to refer more to the external structure of values i.e. links between values and other cognitive structures rather than to features of the value itself. Presumably, however, given his definition of values, the dimension of accessibility could also be assessed.

Research has shown that attitude accessibility, as measured by response latencies, is positively correlated with attitude importance (e.g. Krosnick, 1989) and attitude extremity (e.g. Fazio, 1989). There is both theoretical and empirical evidence that value strength could also be measured by response latency and that value importance and value accessibility would be positively correlated. There is considerable research, which has manipulated value accessibility, often as a technique to change attitudes in persuasive communication (e.g. Eagly & Chaiken, 1993). For example, a number of manipulations have used the repeated expression of values. Although not discussed in terms of value structure, it is conceivable that these manipulations work by activating and thereby strengthening, the evaluation-object link.
Indeed, unpublished research by Gilchrist (1996), found response latency to be a reliable and valid measure of value importance. It is therefore conceivable that values can be equated with attitudes in terms of structure and that the principles of Fazio’s (1986) accessibility framework could be applied to the value domain.

Present Study

The use of response latency aims to bypass some of the problems inherent in self-report value measurement by taking a measure of value importance unobtrusively. The individual is assumed to be unaware of the relevance of their response times, making responses less vulnerable to falsification. Response latency could in this way, represent a more direct indicator of value strength.

Despite being used with increasing frequency within the attitudinal domain, with one exception (Gilchrist, 1996), the authors are not aware of any attempt to measure value accessibility using response latency. The majority of attitude theorists have proposed a conceptualisation of attitudes, which could include values, nevertheless, an examination of studies using response latency reveals that evaluations have been measured toward specific attitude objects rather than towards abstract attitudes i.e. values.

The present study proposes a structural definition of values as object-evaluation association in memory. This definition, in addition to being compatible with value strength as measured by self-report on an evaluative continuum, also equates value strength with accessibility. Following Fazio (1989), value accessibility can be indexed as the speed with which individuals can indicate the importance of values. The more accessible a value is in memory the more quickly respondents should be able to indicate its importance.

Although attitude theorists have found a positive linear relationship between attitude extremity and attitude importance, it is assumed that since values are, by definition, desirable and are frequently accepted unconditionally (see Maio & Olson, 1998), there would be a not positive relationship between value importance and value accessibility. Unlike attitudes whose evaluations may be bi-polar, values would be rated by the majority of respondents as positive i.e. important. Therefore, in contrast to attitudinal findings (e.g. Downing, Judd & Brauer, 1992; Fazio, 1989), a direct correlation between value extremity and value importance would not be expected.
The following study assesses the test-re-test reliability and validity of response latency as a measure of value strength. Specifically it is predicted that value accessibility (as operationalised by a measure of response latency) will be positively correlated firstly, with value importance as indicated by ratings on the SVI (e.g. Schwartz, 1996) and secondly, with the dichotomous response valences reported during response latency trials. In order to assess test-retest reliability, response latencies to each value item are measured twice by each respondent. There are two experimental conditions. In condition 1, the value items presented during the latency trials consist solely of individual value names e.g. Enjoying Life). In condition 2, explanatory phrases are added in parenthesis e.g. Enjoying Life (enjoying food, leisure, sex, etc.)

Method

Participants
Sixty students enrolled at the University of Surrey, UK participated in the experiment. This included 30 in condition 1 (15 male, 15 female) and 30 in condition 2 (16 male, 14 female). Students were psychology, sociology and economics students. Ages ranges from 19 to 22 years. All participants spoke English as their first language. Participants were directly recruited by the experimenter and asked if they were prepared to take part in a study examining individual values. All participants received a course credit in return for their participation.

Materials (see Appendix A)
Response Latency Measure
The list of fifty-eight targets was derived directly from the Schwartz Value Inventory (Schwartz and Bilsky, 1987, 1990). In condition 1, values are presented without explanatory phrases and in condition 2; each value in the inventory is followed by an explanatory phrase in parenthesis. Each value was presented to participants via an IBM clone PC placed in a quiet room. An additional eight value items, derived from The Value Survey (Rokeach, 1967) were used as practice trials. When the participant had demonstrated that they were able to respond to the value items in less than 5 seconds the main experiment began. In condition one the values labels were presented on the monitor without the descriptor words, elaborating on the meaning of the item. In condition two, the explanatory phrases from the SVI were included in parenthesis underneath each value. Each value appeared in capitals in the centre of the screen above the two participant response categories, 'very important' and 'not important'. The value remained on the screen until the participant had indicated their response.
However, after the first 30 subjects had been tested, it was realised that there was ambiguity about the meaning of the stimuli. Initially the descriptors were omitted so as to reduce the effect of stimulus length on the response latencies. The stimuli in the written form of the SVI were interpreted differently. Therefore in order to improve the validity of the data, a second condition included explanatory words in parenthesis.

Value Survey
The same value items were also presented in the original survey form of the Schwartz Value Inventory. Respondents were asked to rate the importance of values "AS A GUIDING PRINCIPLE IN MY LIFE". Participants indicated the importance ratings of their attitudes towards each of the values by circling one number on a nine-point scale ranging from 7 (of supreme importance), 6 (very important), 5,4 (unlabelled), 3 (important), 2,1 (unlabelled), 0 (not important), to -1 (opposed to my values). A demographic section at the bottom of the SVI asked for respondents to fill in their age and sex.

Procedure
Participants took part one at a time. The procedure consisted of 5 stages: (1) practice trials, (2) first latency assessment, (3) distractor task, (4) second latency assessment and (5) questionnaire completion. The presentation order of the values was kept constant across participants. Participants sat in front of a computer screen where they were told that the experiment concerned value measurement and that there were no right or wrong answers. Both verbally (by the experimenter) and visually (via an instruction sheet), participants were instructed to rest their hands comfortably and keep one index finger above each of the two response keys. It was explained that a series of words would appear sequentially in the middle of the computer screen and that their task was to press a key labelled 'not important' or a key labelled 'very important', as quickly as possible to indicate their judgement of the target word.

Each participant was instructed that there were two things they had to keep in mind (cf. Fazio, 1990). First and above all they were told to be accurate and not in such a hurry that they might regret a decision. Second, they were told that while being accurate, they should try to respond as quickly as possible, so they should maximize both the speed and accuracy of their responses and maintain concentration until the end of the task.

The first trial was preceded by 8 practice trials taken from The Value Survey (Rokeach, 1967), which were not included in the SVI, so as to familiarise participants with the task. A given value remained in
the centre of the computer screen until the participant responded. Both the valence of response and the latency of response between stimulus onset and depression of the response key were recorded in milliseconds. A three second interval separated response and the presentation of the next value. It was assumed this would reduce the possibility of any evaluation effects confounding the latency of subsequent trials.

At the beginning of each trial, a series of asterisks appeared on the screen to form a visual fixation point in the centre of the screen. These were followed by the appearance of a value and its descriptor in capital letters where the fixation point had been. Once a response was recorded a fixation point appeared and was immediately followed by the next trial item.

In order to minimise problems associated with participants elaborating on the target items in the delay between testing sessions, the two sessions were separated only by a short period in which participants were required to engage in a demanding and unrelated cognitive task. Participants had no chance to reconsider their responses in the knowledge that they would be re-tested shortly. By imposing a delay, value activation was assumed to have returned to its baseline level of chronic accessibility before the second testing session began. The content was totally unrelated to the experimental materials and was included solely for the purpose of distraction. It required considerable concentration.

Participants were given instructions on how to perform the distractor task immediately after performing the first trial, which consisted of playing a visuo-spatial computer game (WORMOID). Participants were given a demonstration of how to play and the commands required, along with a brief synopsis of the basic objectives of the game. After the demonstration, they were told to play for three minutes. When their time was up, participants were thanked and told they would be performing the final word association task.

Once the second trial was performed, participants completed the SVI. Self-report value importance ratings were measured using the same technique employed by Schwartz and Bilsky, 1990. Participants rated each one of the fifty-eight values “AS A GUIDING PRINCIPLE IN MY LIFE” by circling one number on a nine-point scale anchored by “not important” (-1) and “of supreme importance" (+7). Participants were then debriefed and thanked for their participation. The complete testing session lasted between 15 and 20 minutes.

Results
Treatment Of Raw Response Latencies

Following Fazio (1990), raw response latencies were transformed in two ways before the data analysis was performed.

Outliers

In order to reduce the effect of outliers, a post-hoc editing procedure similar to that used by Fazio et al (1986), was carried out which aimed to omit response times generated by processes other than those being studied. Extremely slow response times were reset to 5 seconds per participant and extremely quick responses, shorter than 0.25 seconds, were treated as missing.

Skewness

A reciprocal transformation of the latency scores was also performed to help eliminate distributional problems prior to analysis. This aimed to bring the tail ends involving slower latencies closer to the centre of the distribution, making the mean a more accurate reflection of the central tendency of the distribution. As participants could take less than 1000ms to respond to some objects, the constant 1 was added to each latency before reciprocation (Fazio, et al, 1986). Transformed latencies were used in all subsequent analyses.

Descriptive statistics

After the above procedures, the mean response latency for condition 1 was 1.75s (SD = .510) for the first testing session and 1.29s (SD = .394) for the second testing session. There was a significant difference between latencies in both sessions, with participants responding significantly faster to items on the second testing session (t = 5.50; df= 29; p< 0). For condition 2, the mean response latency was 2.44s (SD = .856) for the first testing session and 1.98s (SD = .698) for the second. Again, participants responded significantly faster to values during the second testing session (t = 3.80; df = 29; p<0). Faster response latencies to items in the second response possibly reflect growing familiarity with the task.

It is notable that response times in condition 2 were longer than those in condition 1. Independent t-tests revealed that for both the first (t = 3.77; df= 58; p< 0) and second testing sessions (t = 4.68.50; df= 58; p< 0), this difference was significant. This may reflect the addition of value
descriptors to the response items since this would presumably increase reading times for each item before any evaluative response could be made.

**Test-Retest Reliability**

For each participant, Pearson product moment correlations for response latencies between the first and second testing sessions were computed. In each condition, the overall mean of the 30 correlations served as the estimated test-retest coefficient. In both condition 1 and condition 2, the mean reliability across participants was significant.

In condition 1, the mean reliability across participants was $r = .311$, $n = 30$, $p < .05$ (range = -.07 to .66). In condition 2, the mean reliability across participants was $r = .381$, $n = 30$, $p < .025$ (range = -.04 to .79). An independent t-test found no significant differences between the reliability coefficients for condition 1 and condition 2 ($t = -1.33$; $df = 58$; ns suggesting that the addition of explanatory phrases in condition 2 has little effect on reliability.

These results suggest that response latency is a reliable measure at the level of individual value items. It should be noted that although these correlations are modest, in only a minority of cases (two in condition 1 and one in condition 2) were the correlations negative.

It was predicted that reliability analyses at the scale level would produce more significant correlation coefficients. To test this, for each individual, the mean response latencies for items loading on each of the ten motivational scales of the SVI were calculated. The test-retest correlations for mean latencies across each scale were then computed for each individual. These correlation coefficients were then tabulated across all subjects. However, these coefficients were essentially unchanged from those at the item level and are therefore not reported. All analyses involving the test-retest estimates were calculated using the $r$ to $z$ transformed correlation, though levels of the correlations are reported after re-translation into correlation coefficients.
Correlations Partialling Out The Effect Of Item Length

Since the value items presented on the latency trials varied in length in condition 1 and more extremely in condition 2 which included the explanatory phrases in brackets, it was possible that the time required to read the items varied between value items and this variation may have confounded the reliability of the response latency data. As a result a series of partial correlations were carried out at the individual level, which removed the effect of item length.

In condition 1 the mean test-retest reliability after partialling out the effect of word length was $r_t = .297$ (range = -.09 to .67; SD = .190), compared to $r_t = .311$. For condition 2, the adjusted mean test-retest was $r_t = .371$ (range = -.04 to .78; SD = .199), compared to $r_t = .381$. So in both conditions, the reliability decreased when the effect of word length was taken into consideration. This suggests that the addition of explanatory phrases did not increase the reliability of response latency as predicted.

Convergent Validity Assessment

Convergent validity was measured in three ways. Following Fazio (1990), the correlation between individual response latency scores and the raw questionnaire and extremity scores for each item were calculated. However, in addition, the correlation between the valences and response latencies on both the first and second latency trials were examined.

(i) Correlations With Raw Questionnaire Scores

The numerical value that participants circled for each value on the SVI was directly recorded. Correlations between absolute questionnaire score and response latency were then calculated for each participant and tabulated across all subjects. In condition 1 the mean correlation across subjects for the first testing session was not significant ($r = .215$, $n = 30$, ns). For the second testing session, the correlation was also insignificant ($r = .133$, $n = 30$, ns). Similarly, in condition 2 the mean correlation across subjects for the first testing session was not significant, $r = .240$, $n = 30$, ns. For the second testing session, they were not significant, $r = .235$, $n = 30$, ns. This may have resulted from individual differences in scale usage. For this reason the correlations between response latency and extremity was examined.

(ii) Correlations With Extremity Ratings

The extremity of questionnaire response for each item was calculated using the absolute deviation from each subjects' mean scale responses across the items. For each subject, the correlation between extremity and transformed response latency was calculated. However, analysis of the results showed
that there was no significant correlation for either condition as might be expected if both conditions tapped 'value strength'.

In condition 1, the mean correlation for the first testing session was $r = -0.023$, $n = 30$, ns. For the second testing session, the mean correlation was $r = -0.028$, $n = 30$, ns. In condition 2 the mean correlation for the first testing session was $r = -0.015$, $n = 30$, ns. For the second testing session, the mean was $-0.020$, $n = 30$, ns. It is noteworthy that for approximately 25% of participants, the correlations were negative. Taken across individuals it would be difficult to argue that there was a strong correlation between response latency and either raw questionnaire SVI scores or the extremity of these responses.

(iii) Relationship between Response Latency and Response Valences

It could be argued that the valence of responses reported by each participant during the latency task itself could act as a validity measure of the response times rather than responses given to the same value items at a later stage on the SVI. To test this possibility, the relationship between the valence recorded by each subject (important = 1; not important = 0) and the corresponding response latency on each value item was recorded for both testing sessions. For each individual, the mean response times for those value items recorded as “important” and those recorded as “not important” were calculated for both presentations.

For condition 1, session 1, the mean response latency to those items regarded as “important” was 1.386s and was significantly lower than that for items recorded as “not important” with a mean of 1.703s ($t = -2.6$, $df = 29$; $p < 0.025$). However in session 2, the mean response latency to items regarded as “important” was 1.257s and for items recorded as “unimportant” was 1.97 (t = -4.57, df = 29, $p < 0$).

For condition 2, session 1, the mean response latency to those items regarded as “important” was 1.77 and this was significantly lower than for all items recorded as “unimportant” was 2.38 ($t = -7.51$, df = 29, $p < 0$). Likewise, for session 2, the mean response latency to those items regarded as “important” was 1.55, significantly lower than those recorded as “unimportant” was 1.97 ($t = -4.57$, df = 29, $p < 0$).

These results suggest that, participants took longer to respond to items that they considered to be “not important”. A possible explanation the low correlations between response latencies and questionnaire responses is that participants were answering at random during the latency tasks. To
Response Inconsistency Across Value Ratings

To test if respondents were answering at random, two analyses were carried out: (a) the valence of responses recorded to each value item were compared to the corresponding questionnaire responses for each participant and (b) the relationship between valences at different testing sessions were compared in order to calculate response inconsistency.

a) Inconsistent Valences Across Testing Sessions

Inconsistent evaluations across latency trials were analysed. An erroneous response is defined as one in which the participant indicates a different valence for each presentation of the same target item i.e. “important” to one presentation of the value item and “not important” to another. The aim in response latency measurement is for subjects to commit very few errors while responding as quickly as possible. The percentage of such “errors” was calculated for each individual. For condition 1, the mean error rate was 13.77% (range = 3% to 45%). Although the error rate was lower for condition 2, i.e. 10.26% (range = 0 to 35%), for both conditions the error rate exceeds the maximum acceptable rate proposed in Fazio’s (1995), guidelines, of 10%.

b) Correlation Between Questionnaire Scores And Valences

Whereas response valences were dichotomies, the value ratings on the questionnaire were recorded on a 9-point scale and so a direct correlation between the two responses was not possible. Inconsistency was operationalised as a case in which either the respondent indicated “not important” during a response latency trial and rated the same value as “important” on the SVI by indicating a rating of 0 or above on the 9-point scale, or “Important” during a response latency trial and rated the same value as “not important” on the SVI. After removing trials in which different valences were recorded in different latency trials of the same target value, the mean questionnaire scores for value items recorded as not important and those value items recorded important were tabulated.

In condition one, for values rated as “not important” during the latency trials, the mean questionnaire score across all subjects was 2.29 (range = -5 to 4.98; SD = 1.14). For “important” values, the mean questionnaire score was 5.12 (range =2.24 to 6.57; SD = .805). A t-test revealed that the
mean score for values rated as important was significantly lower than for those rated as unimportant (t = -9.30, df = 28, p ~ 0)

In condition two, for values rated as "not important" during the latency trials, the mean questionnaire score across all subjects was 2.03 (range = -3.33 to 14.94; SD = 2.29) and for "important" values, the mean questionnaire score was 5.20 (range = 1.03 to 6.68; SD = 1.40). A paired samples t-test revealed that the difference was significant (t = -5.10, df=27, p<0.025). These figures suggest that respondents were making consistent computer recorded responses that corresponded to their questionnaire responses.

**Correlation Between Response Speed And Percentage Of Errors**

An analysis was carried out to examine whether a speed-accuracy trade-off had occurred i.e. whether more inconsistent responses had been made by those participants who had responded on average more quickly. According to Fazio’s model (Fazio et al, 1986; Fazio, 1990), it would be expected that response latencies for inconsistently evaluated target items would be longer since no automatic, easily accessible, evaluative response exists in memory. Significantly more time should be required in responding to these targets, reflecting more deliberate processing.

To test this, the mean response latency across all value trials and the percentage of responses that were inconsistent were correlated for each subject. Across all subjects, in condition 1, the mean correlation was not significant, (r = 0.03, n = 30; ns) and similarly in condition 2, there was no significant correlation (r = 0.261, n = 30, ns). These results suggest that the speed of response had no effect on the number of inconsistent responses made.

**Discussion**

The mean response latency for condition two was longer than that for condition 1. This may reflect more ambiguity concerning the meaning of value items before the addition of descriptors in condition two. Latencies for both conditions were significantly shorter in the second latency trial. This may have resulted from participants’ growing familiarity with the task.

The results of both conditions provide significant but moderate estimates of the test-retest reliability of response latency. After making modifications to the procedure in condition two, the test-retest reliability
increased from $r_{1} = .311$ to $r_{1} = .381$. One explanation is that the presence of explanatory phrases in parenthesis in latency trials aided participants' comprehension of the target values and their interpretation remained constant across both trials. In condition 1, descriptors were left out of the latency trials as it was predicted that subjects would be likely to read these only on the first trial and therefore respond, more quickly during the second trial without reference to descriptors thereby increasing their response times. However the two reliability coefficients were not significantly different. The addition of explanatory phrases had no significantly effect on reliability of the target values interpretation remained constant across testing sessions.

To test the validity of response latency as a measure of value strength, individuals' response latencies were compared to responses in which speed of responding is not an issue. Latency estimates of associative strength did not correlate significantly with either raw questionnaire scores or extremity estimates. According to Fazio's logic, this finding suggests weak construct validity regarding the appropriateness of response latency as a measure of associative strength.

Referring to construct validity in general, these anomalous results suggest either that the rating scales of the latency trials may have been an inappropriate measurement of value strength or that the results were affected by measurement error. These two possibilities are discussed later.

Analysis of the rate of inconsistent responses found it to be unsatisfactorily high according to Fazio's guidelines (1990). The inconsistency rate for condition 1 was 16.6% and although this decreased to 10.26% for condition 2, these results suggest that participants were operating from a point that was well below maximum accuracy. One possible explanation is that respondents only had a dichotic response choice i.e. “very important” or “not important”. No option was available representing a middle ground i.e. slightly important. Individuals with either ambiguous values or values of low importance may have fluctuated in the rating they assigned to a particular value between trials, causing inconsistent, 'erroneous' responses.

However, it is not so much the incidence of inconsistent responses as the speed at which participants respond to items that is crucial according to Fazio's theory. It would predict that response latencies for inconsistently evaluated value objects would be longer as no automatic easily accessible evaluative response exists in memory. Therefore, significantly more time should be required reflecting more deliberate processing. However, no significant relationship was found between error rate and mean response time.
Possible reasons for the relatively low associations in this study merit comment. One possible explanation for both the low reliability and construct validity findings may have been the fact that there was little dispersion across and between subjects in their ratings of value strength on the SVI. The majority of values were rated as being "very important" or of "supreme importance". Future studies could help avoid this effect using the least-most method whereby subjects are firstly asked to read all the items in the list and choose the most and the least important in order to generate top and bottom anchoring points. This may encourage subjects to differentiate between levels of value importance.

In addition, the sensitivity of the latency trials may have been reduced due to the limited number of response options available. As discussed, this may have increased the rate of inconsistent responding reducing both reliability and validity estimates if time was spent deliberating on the most preferable response category. Individual response latencies could be measured by recording subjects' positions along a Likert-type scale (e.g. very important, important, neutral, slightly important, not important). Fazio (1990) found latency data to remain sensitive when a 5-response alternative Likert scale was employed.

Participant feedback suggested that a proportion of individuals might have believed that the aim of the experiment was a measurement of response consistency. A large proportion of participants remarked that they had experienced difficulty remembering which numerical response they had given during the response latency task presumably in order to repeat this response in the questionnaire. This may have affected the decision criteria used by participants. On encountering a value for the second time, participants may have arrived at an initial response relatively quickly but then have undergone a mental checking procedure to ensure that both responses to a particular item were consistent. As a result, response latencies may have been artificially increased for the second testing session. This biasing effect could possibly be reduced by increasing the time intervals between the two latency trials or between latency trials and the completion of the SVI. Despite low validity estimates, the finding of moderate levels of reliability suggested methodological improvements might result in reliable and valid results.

Also revealed at debriefing was a feeling that the period between the two testing sessions may have allowed participants to reconsider their responses in the knowledge that they would be re-tested shortly. This may have served to change the strength of participants' attitudes due to repeated cognitive elaboration on some of the targets. Clearly if target attitude strengths had changed between
the two testing sessions then the test-retest correlation would be a biased underestimate of the
reliability of the response latency measure. To address these issues a second experiment was
conducted with only one response latency testing session. It was considered unlikely that people would
remember responses and that each judgement essentially acted as a distractor for the others.
CHAPTER 3: STUDY 2

A replication of experiment one was carried out but a number of procedural modifications were carried out in an attempt to increase the reliability and validity of response latency measurement. Firstly, the explanatory phases were included in parenthesis, following each value item in the latency trials, since participant feedback had suggested this was necessary to avoid ambiguous and varying individual interpretation of the value items.

Secondly, in order to minimise problems associated with participants elaborating on the target item in the delay between testing sessions, in this experiment, only one latency assessment was used, in which each value item was included twice, in random order.

In addition, in order to increase the sensitivity of the latency data, experiment 2 included a larger number of response options on the latency trials. It was supposed that in order to make the latency data most comparable to that of the SVI (e.g. Schwartz, 1996) responses, then both measures should contain nine response options on a Likert-type scale ranging from -1 (opposed to) to +7 (of supreme importance). However, it was also possible that this number of response options would be inappropriate for latency measurement since indecision regarding the exact scale response might interfere with latency estimates. Fazio (1990) found latency data to remain sensitive when a five-response alternative Likert scale was employed. To account for this possibility, study 2 had 2 experimental conditions. In condition 1, the latency trial had five response options and in condition 2, it had nine response options.

Method

Participants
Sixty students took part in the experiment. All were studying at the University of Surrey, UK. This included 30 participants in condition 1 (10 male, 20 female) and 30 participants in condition 2 (8 male, 22 female). Participants were all psychology, sociology and economics students. Ages ranged from 18 to 23 years. All participants spoke English as their first language. Participants were directly recruited by the experimenter and asked if they were prepared to take part in a study examining individuals’ values. All received a course credit in return for their participation.

Materials (see Appendix B)
Response Latency Measure

As in experiment 1, all targets were derived directly from the Schwartz Value Inventory (Schwartz and Bilsky, 1987, 1990). Each value in the inventory is followed by an explanatory phrase in parenthesis. Each value was presented to participants twice in random order, via an IBM clone PC placed in a quiet room. An additional eight value items, derived from The Value Survey (Rokeach, 1967) were used as practice trials. Each value appeared in capitals in the centre of the screen above the two participant response categories.

In condition 1, there were five response categories, namely: -1 (not at all important); 0 (slightly important); 1 (moderately important); 2 (very important) and 3 (supremely important). In condition 2, there were nine response categories, which ranged from -1 (opposed to the values); 0 (not at all important); 1 (unlabelled); 2 (unlabelled); 3 (unlabeled); 4 (very important) and 5 (extremely important). The value remained on the screen until the participant had indicated their response.

The Value Survey

The same value items were also presented in the original questionnaire form of the Schwartz Value Inventory. Respondents were asked to rate the importance of values “AS A GUIDING PRINCIPLE IN MY LIFE”. Participants indicated the extremity of their attitudes towards each of the values by circling one number on a nine-point scale ranging from 7 (of supreme importance), 6 (very important), 5 (unlabelled), 3 (important), 2 (unlabelled), 1 (unlabelled), 0 (not important), to 1 (opposed to my values). A demographic section at the bottom of the SVI asked for respondents to fill in their age and sex.

Procedure

Participants took part one at a time. The procedure consisted of 3 stages: (1) practice trials, (2) latency assessment and (3) questionnaire completion. The presentation order of the values was kept constant across participants. Participants sat in front of a computer screen where they were told that the experiment concerned a simple word association task and that there were no right or wrong answers. Both verbally (by the experimenter) and visually (via an instruction sheet), participants were instructed to rest their hands comfortably and keep one index finger above each of the two response keys. It was explained that a series of words would appear sequentially in the middle of the computer screen and that their task was to press one of the labelled keys to indicate their response. As before, the instructions advised participants that there were two things they had to keep in mind (cf. Fazio, 1990); to be accurate and not in such a hurry that they might regret a decision but while being accurate they should try to respond as quickly as possible.
The first trial was preceded by 8 practice trials taken from The Value Survey (Rokeach, 1967), which were not included in the SVI, so as to familiarise participants with the task. A given value remained in the centre of the computer screen until the participant responded. Both the valence of response and the latency of response between stimulus onset and depression of the response key were recorded to the nearest millisecond. A three second interval separated a response and the presentation of the next value. It was assumed that the interval of 3s would reduce the possibility of any evaluation effects confounding the latency of subsequent trials. At the beginning of each trial, a series of asterisks appeared on the screen to form a visual fixation point in the centre of the screen. These were followed by the appearance of a value and its descriptor in capital letters where the fixation point had been. Once a response was recorded a fixation point appeared and was immediately followed by the next trial item.

Finally, participants completed the SVI. Self-report value extremity ratings were measured using the same technique employed by Schwartz and Bilsky, 1990). Participants rated each one of the fifty-six values “AS A GUIDING PRINCIPLE IN MY LIFE” by circling one number on a nine-point scale anchored by “not important” (-1) and “of supreme importance” (+7). Participants were then debriefed and thanked for their participation. The complete testing session lasted between 15 and 20 minutes.

Results

Treatment of raw response latencies
As in experiment 1, the raw response latencies were transformed before data analysis. As before, response latencies were treated as missing if shorter than .25 seconds and latencies exceeding 5 seconds were reset to 5 seconds. As before, latencies were transformed by adding 1 and taking reciprocals.

After outliers were excluded, the untransformed mean response latency for condition 1 was 3.29s (SD = .877) for the first testing session and 2.75s (SD = .798) for the second testing session. There was no significant difference between latencies in both sessions (t=-1.27; df =29; ns). For condition 2, the mean response latency was 3.28s (SD = .668) for the first testing session and 3.14s (SD = .781) for the second. Again, there was no significant difference in response latencies (t= -.861; df = 29; ns).

The mean response latencies for studies 1 and 2 were compared and are presented in table 1 below:
A mixed factor ANOVA, A x B x (C) experiment was carried out to determine whether there was any significant differences between the means of two between subjects factors, namely experiment (1 or 2) and condition. The F values confirmed the prediction that there was a significant between subject effect for both condition \( [F(1,116) = 4.67; p < .05] \) and for experiment \( [F(1,116) = 49.83; p < .05] \). The interaction between condition and experiment was, however, not significant as would be expected \( [F(1,116) = .031, ns] \).

T-tests were carried out to examine these differences more closely. The response latencies for the 5-response option (condition 1) in experiment 2 were significantly longer than those for experiment 1 condition 1 (no explanatory phrases) for both testing session 1 (\( t= 8.29; df = 58; p~0) \) and testing session 2 (\( t= 9.0; df = 58; ns) \). Similarly for study 1, condition 2 for session 1 (\( t= 3.79; df = 58; p~0) \) and testing session 2 (\( t= -4.0; df =58; p~0) \).

Likewise, the response latencies for the 9-response option (condition2) in experiment 2 were significantly higher than those for experiment 1 condition 1 (no explanatory phrases) for both testing session 1 (\( t= 9.97; df = 58; p~0) \) and testing session 2 (\( t= 11.55; df = 58; p~0) \). Similarly for study 1, condition 2 for session 1 (\( t= 4.25; df = 58; p~0) \) and testing session 2 (\( t= 6.07; df = 58; p~0) \).

As in study 1, all subsequent analyses involving the test-retest estimates were calculated using the r to z transformed correlation, though levels of the correlations are reported after re-translation into correlation coefficients.

### Test-retest reliability
For each participant, Pearson product moment correlations for response latencies between the first and second testing sessions were computed. The overall mean of the 30 correlations served as the estimated test-retest coefficient. In both conditions the mean reliability across participants was significant. In condition 1, the mean reliability across participants was \( r = .321, n = 30, p < 0.05 \)
(range = -.06 to .81). In condition 2, the mean reliability across participants was $r = .320$, $n = 30$, $p < 0.05$ (range = -.12 to .67). These results suggest that response latency is a reliable measure at the level of individual value items.  

The reliability coefficients were compared to those of study 1 to determine whether the changes in methodology influenced reliability estimates. The mean reliability coefficients are presented below:

<table>
<thead>
<tr>
<th>Test-retest Reliability ($r_{t,t}$)</th>
<th>Expt 1</th>
<th>Expt 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition 1</td>
<td>.311</td>
<td>.321</td>
</tr>
<tr>
<td>Condition 2</td>
<td>.381</td>
<td>.352</td>
</tr>
</tbody>
</table>

Table 2: Mean reliability coefficients for studies 1 and 2.

As can be seen in Table 1, the highest correlation coefficient is for condition 2 in study 1 where response latency trials involved a dichotomous response format. Independent T-tests revealed that there was no significant difference between the reliability coefficients of study 1, condition 1 and either study 2 condition 1 ($t = -.104; df = 58; ns$) or study 2 condition 2 ($t = -.1218; df = 58; ns$). Likewise, there was no significant different between the correlation coefficients of study 1, condition 2 and study 2 condition 1 ($t = 1.234; df = 58; ns$) or study 2, condition 2 ($t = -1.233; df = 58; ns$). This finding suggests that the methodological changes introduced in study 2 had no significant effect of the reliability of the response latency measure.

**Convergent Validity Assessment**

(a) Correlations With Absolute Questionnaire Scores

The numerical value that participants circled for each value on the SVI was directly recorded. Correlations between absolute questionnaire scores and response latency were then calculated for each participant and tabulated across all subjects. In condition 1 the mean correlation across subjects for the first testing session was not significant ($r = .299$, $n = 30$, $ns$). For the second testing session, the correlation was also insignificant, ($r = .165$, $n = 30$, $ns$).

Similarly, in condition 2 the mean correlation across subjects for the first testing session was not significant, ($r = .264$, $n = 30$, $ns$). For the second testing session, were not significant, ($r = .129$, $n = \ldots$

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1 Calculations were carried out at the individual-item level only since analyses in study 1 had shown no significant differences between correlation coefficients resulting from individual and scale-level analyses.
This may have resulted from individual differences in scale usage. For this reason the correlations between response latency and extremity was examined.

(b) Correlations With Extremity Ratings

The extremity of questionnaire response for each item was calculated using the absolute deviation from each subjects' mean scale responses across the items. For each subject, the correlation between extremity and transformed response latency was calculated. However, analysis of the results showed that there was no significant correlation for either condition as might be expected if both conditions tapped 'value strength'.

In condition 1, the mean correlation for the first testing session was \( r = .118, n = 30, \text{ns} \). For the second testing session, the mean correlation was \( r = .150, n = 30, \text{ns} \). In condition 2, the mean correlation for the first testing session was \( r = .252, n = 30, \text{ns} \). For the second testing session, the mean was \( .126, n = 30, \text{ns} \).

(c) Correlations With Valences

It could be argued that the valence of responses reported by each participant during the latency task itself could act as a validity measure of the response times rather than responses given to the same value items at a later stage on the SVI. To test this possibility, the relationship between the valence recorded by each subject and the corresponding response latency on each value item was recorded for both testing sessions.

In condition 1, the correlation between valence and the response latency for the first testing session was significant \( r = -.370; n = 30, p < .025 \). However, the correlation for the second testing session was not significant \( r = -.217, n = 30, \text{ns} \). In condition 2 both correlations were significant in both testing session 1 \( r = -.317, n = 30, p<.05 \) and testing session 2 \( r = -.356, n = 30; p<.05 \).

These figures suggest that, except for during the second trial in condition 1, the length of time subjects took to respond to the value items corresponded to the reported personal importance of that particular value as a guiding principle.

Response Inconsistency across value ratings

To test if respondents were answering at random, two analyses were carried out for each participant:

(a) the valence of responses recorded to each value item were compared to the corresponding
questionnaire responses for each participant and (b) the relationship between valences at different testing sessions were compared in order to calculate inconsistent responses.

(a) Correlation between questionnaire scores and valences
Unlike in study 1, in which participants responded using a dichotomous response format of “not important” or “important” in the response latency trials, in study 2, both the response latency valences and questionnaire responses were rated on interval scales and averaged across all respondents.

In condition 1, the mean correlation between the response valences of evaluative judgements made during the response latency sessions and raw pencil and paper questionnaire scores was significant for the first trial: \( r = .36; n = 30, p<.05 \) (range = -.03 to .86; SD = .191) and for the second trial and \( r = .357; n = 30, p<.05 \) (range = -.06 to .83; SD = .211). In condition 2, the mean correlation between response latency valences and raw questionnaire scores was significant for the first trial: \( r = .575; n = 30, p~0 \) (range = .07 to .96; SD = .191) and for the second trial \( r = .556, n = 30, p~0 \) (range = -.12 to .94; SD = .275). These correlations are also indicative of the relationship between the two types of measure i.e. computer recorded evaluative valences and pencil and paper questionnaire ratings.

(b) Inconsistent valences across testing sessions
An analysis of ‘error’ or inconsistent evaluations across trials was carried out. An erroneous response was defined as one in which participants indicated both an “important” and “not important” valence to the same value object. Unlike in experiment 1, in which participants had a dichotomous choice between valence ratings i.e. “not important” or “important”, in the present experiment, participants responded on a Likert-type scale; condition one had 5 response options and in condition two had 9 options. 100% accuracy between trials would therefore be more difficult to achieve. To allow for minor fluctuations in scale usage across trials, a consistent response was operationalised as one in which the second valence of a particular value item was equal to the first valence, plus or minus one scale point.

The error rate across the 56 value items ranged from 0 to 50% and the mean was 15.2% (SD = 13.5) judgements, for condition 1. For condition 2, the mean error rate was 12.9% (range = 0 to 50%; SD = 12.9). The error rate was therefore greater in condition 1 which had 5 response options. However, the difference was not reliable (\( t = 680, df = 58, ns \)). Furthermore, in both conditions, the
rate of inconsistent responses was higher than the maximum acceptable level of 10% proposed by Fazio (1990).

**Correlation between response speed & percentage of errors**

According to Fazio's model (Fazio et al, 1986; Fazio, 1990), it would be expected that response latencies for inconsistently evaluated value objects would be longer as no automatic, easily accessible evaluative response exists in memory. Significantly more time should be required, reflecting more deliberate processing. An analysis was carried out to investigate whether those participants who had responded on average more quickly had made more inconsistent responses. The mean response latency across all value trials and the percentage of inconsistent responses were correlated for each subject.

In condition 1, the correlation was significant \( r = .31, n=30, p = .05 \), suggesting that the longer participants took in general to respond to value items, the fewer inconsistent responses they made. Participants may have believed that the experiment was testing the consistency of their response and as a result their decision criteria may have become stricter as they spent time checking that their reported valences were consistent across trials of a particular value item. However, in condition 2, there was no significant correlation \( r = .219, n=30, \text{ns.} \).

**Discussion**

Although no significant difference between response latencies was found between testing sessions, the mean response latencies were higher for condition 2, which involved 9 as opposed to 5 response options, suggesting that the increased number of response options increased the time it took respondents to select a specific rating.

As in study 1, correlations between response latency and absolute questionnaire scores and extremity scores were insignificant, suggesting that the addition of more response options during the latency trials had little effect on this measure of construct validity. In addition, latency estimates of associative strength did not correlate significantly with extremity estimates.

There was no significant correlation between speed and percentage of inconsistent responses except in condition one. It is unclear why such strategic processes would have affected only this condition. The greater number of response options available in condition two may have lead to an increased likelihood...
that a given latency score reflected indecision concerning the specific numerical response that was most representative of value strength. Fazio (1995) suggests that 5 options is the optimum number of response options, with more options producing unreliable latency data.

Studies 1 & 2: General Discussion

In study 2, the mean response latencies were significantly higher than in study 1, as would be expected given the more demanding nature of the task. Given the increased number of response options, it is not surprising that subjects took longer to identify the appropriate option to reflect the importance of their particular values. However, only in study 1 were response latencies significantly shorter in the second latency trial, which possibly reflected subjects’ growing familiarity with the task. Response latencies were not significantly different in the two latency trials in study two for either condition 1 or condition 2. This finding may have resulted from the fact that response latencies not only reflected value strength, but also subjects’ decisions about the exact level of importance they should assign to each. Due to the greater number of choices, there is less chance that responses to the a particular value on the first latency trial would be easily recalled in order to be repeated later.

The results of studies 1 and 2 provide significant but moderate levels of reliability. It is inherently difficult to assess the reliability of accessibility measures since measuring a value would increase its accessibility and therefore alter latencies of response during later phases. The results of both experiments provide significant estimates of the test-retest reliability of response latency. Making modifications to the procedure in experiment two did not have a significant impact on reliability estimates. The largest test-retest reliability was for study 1 condition 2, which involved a dichotic response task with value descriptors.

In both studies, the response latencies did not significantly correlate with either the raw questionnaire scores of the SVI or the corresponding extremity scores. This brings into question the appropriateness of response latency as a measure of associative strength. Practically, it means that without an alternative measure to verify responses, one cannot be certain that a person who holds a weak evaluation of a given value will not respond erroneously quickly, and positively. But the valences recorded at the latency trials could function as a validity check.

However, whilst the reported correlations are modest, they are consistent with and even better than some previous findings examining the relationship. For example, Powell & Fazio (1984) reported a
correlation of .20, whilst Houston & Fazio (1989) reported a correlation of .21. In the light of these findings, the results are not out of the ordinary. Similarly, Krosnick (1989) demonstrates that response latency measures for target attitude objects correlate positively and significantly with 12 other indices of attitude strength although correlations do not exceed +. 5.

The lack of correlation between response latency and SVI extremity scores may also indicate that the two measures are not tapping the same underlying construct. Attitude accessibility is not assumed to be a simple reflection of attitude extremity. Fazio (1995), with reference to attitudes states that the concept of accessibility suggests the quality of an attitude and refers to those variables concerned with the representation of the attitude in memory. In contrast, extremity is more appropriately considered an antecedent of attitude strength rather than an indicator of the same. Hence the findings may reflect exactly the same problem that prompted research into an additional measure of value strength.

Extrapolating to values, a more comprehensive evaluation of convergent validity might be to introduce a measure that also refers to the qualities of the value per se. Future studies could include a measurement of associated affect, cognition and degree of ambivalence. Alternatively, indirect measures of accessibility such as self-reports asking participants how often they think/talk about particular values could be used. The varying degrees to which response latency has been correlated with questionnaire measures can be re-interpreted in terms of the instability of the latter as a measure of attitude strength.

In addition, it could be argued that correlations between latency scores and valences on the corresponding latency tasks provide a more accurate representation of construct validity since both measures are taken at the same time. In study 1 this relationship was significant for both conditions whilst in study 2, only the results of condition 1 provided significant correlations. The lack of significant correlations with the 9-valence condition may reflect the inappropriateness of using 9 response options in latency measurement (cf. Fazio, 1995).

Fazio et al (1990) compared the valence of latency responses, to a self-report measure and found an inconsistency rate of 7.3% over 100 objects. Fazio reported that an error rate that does not exceed 10% is adequate (cf Fazio, 1990). The levels reported in the present research suggest that participants were operating from a level well below maximum accuracy.
The overall lack of a relationship between speed of response and rate of inconsistent responding was unexpected. It is often the case with reaction time measures that the faster participants respond on average, the more inconsistent evaluations they make. However, an examination of the response characteristics of participants revealed that this pattern was only evident for study 2, condition 1, which involved five response options and did not occur in condition 2 or in study 1 involving a dichotomous choice.

This brings into question the prediction that individuals will take more time to evaluate weak or ambivalent values, as Fazio (1986) has found is the case with attitudes. Response latencies for inconsistently evaluated value objects would be longer, as no automatic, easily accessible, evaluative response exists in memory. Significantly more time should be required reflecting more deliberative processing. The implication is that these responses may reflect genuine error or inaccuracy, as exemplified in fast-guess responding. Although the relation between speed and accuracy is not linear, the faster individuals respond, the more likely it is that they will make an error. The decision criterion adopted may have been relatively lenient. Rather than reflecting and deliberating about their responses, participants may have been less cautious, responding without adequate thought leading them to be inconsistent in their responses. The ideal situation during response latency tasks is for subjects to commit very few errors while responding as quickly as possible. The instructions given did aim to encourage both accuracy and speed, but especially accuracy.

The results appear to indicate that weak values will not always be reflected in slow response times. Quick responses may indicate weak attitudes and/or carelessness in people. This causes difficulties in interpretation. Slow responses may reflect (a) a judgment that the value is not important (inconsequential), (b) an attitude that is ambivalent, or (c) a carefully considered, middle-of-the-road position.

Analysis of individual's value ratings revealed very few negative ratings, suggesting that few people considered the values to be unimportant. This may reflect the belief that values are inherently positive entities. Respondents tended to end-pile their ratings, assigning very high ratings to all of the values. The lack of differentiation between value importance may have obscured the relationships between values and response latency, which depend, in part, on the variability of the values measurement. Consequently, low correlations may not reflect weak relationships but instead result simply because the value measurements did not vary to a sufficient extent to detect their influence.
To avoid this problem, study 2 employed the least-most procedure in which respondents were asked to scan the list of values and pick both the most and least important value before rating the values on an interval scale. The assumption was that this would result in respondents making a comparison whilst overcoming the problem of time and difficulty associated with ranking. Given that this problem persisted in study 2, the rank-then-rate procedure might be an alternative method of alleviating this problem in future studies. Respondents are asked to rank the set of values in order of importance. Following the ranking task, respondents are asked to go back and rate their values on some sort of interval scale. The goal is to have respondents compare and contrast the values in the ranking task and with this information fresh in memory, provide interval level data in the rating procedure. This procedure would ideally result in more differentiated reported value rating than a standard rating procedure.

Of course, it could not be ruled out that sub-optimal testing procedures could offer an alternative explanation for the weak test-retest correlations. While, to the best of our knowledge every precaution was taken to adhere to the prescribed procedural conditions and instructions, it is possible that poor reliability is not inherent to response latency measures in general but is a reflection of the procedures employed here.

The purpose of these studies was to investigate the nature of the value importance-accessibility relationship assuming that response latency data would provide an index of value accessibility. However, reliability estimates were found to be low but acceptable and future research is needed to verify results regarding construct validity. These results hint at the possible usefulness of response latency in investigation of the information processing associated with values and attitudes. One way of assessing whether value accessibility is a measure of value strength is to assess the documented impact of increased accessibility on the consequences of value strength i.e. increased correlations between values and attitudes and effects on information processing. As stated in chapter 1, research has demonstrated that increased attitude accessibility is associated, for example, with judgements concerning related attitudes (e.g. Fazio & Williams, 1986) and resistance to counter persuasion (e.g. Houston & Fazio, 1989). If values are conceptualised as structurally comparable to more general attitudes, then it is likely that these consequences apply equally to both values and attitudes. These ideas are examined in the following studies.
CHAPTER 4: STUDY 3

Introduction

Whilst studies 1 and 2 investigated the internal structure of values i.e. the strength of the associative link between a 'value object' and its evaluation in memory, study 3 examines the external structure of values specifically their hierarchical links to attitudes. As discussed in chapter 1, section 3, both value and attitude theorists have discussed the linkages between values and other cognitive structures (i.e. other values, beliefs and attitudes) within an individual's memory e.g. Rokeach (1973); Pratkanis (1989); Feather (1990), Rajecki (1990). Eagly & Chaiken (1993) suggest that attitudes become linked to one another when one attitude implies another psychologically as a result of logical analyses; by observing a conjunction between two attitude objects and through observations of covariation between attitudinal positions. This link is frequently considered hierarchical, although Katz & Hass (1988) provide evidence of a bi-directional value-attitude relationship.

The accessibility of related cognitive constructs is said to increase as a result of the activation of related structures (Sherman, 1987). This can occur through priming which makes a specific construct more accessible in memory (Sherman, 1987). Once a construct is activated, a process of automatic spreading activation takes place that activates targets and associated stimuli and facilitates the retrieval of related concepts (Katz & Hass, 1988). This process is comparable to the process proposed by Fazio (1995) for the elicitation of evaluative responses from the presentation of a value object. This is the principle on which the "domino theory" is based (see Rajecki, 1990; Eagly & Kulsea, 1997; Eagly & Chaiken, 1998).

There are a number of empirical studies demonstrating that construct activation leads to increases in the accessibility of related structures. For example, Meyer and Schvaneveldt (1976) demonstrated that response time to a test word is faster when the word is immediately preceded in the test list by a closely related word then when the test word is preceded by an unrelated word. Dovidio, Evans and Tyler (1986) found that priming subjects with racial categories (Black or White) shortened response times to identify traits that are stereotypically attributed to these groups. They concluded that the primed concept became more accessible and then acted as a mental filter through which the later events were processed or recalled. Similarly, Tourangeau, Rasinski & D'Andrade (1991) provided an empirical demonstration of the effect of belief primes on attitude accessibility using response latency
measurement. Respondents were timed as they answered attitude questions about abortion and welfare. Responses to agree/disagree items were faster when an item followed another item from the same ‘topical cluster’. They concluded that retrieving beliefs relevant to one question could activate linked beliefs and thereby facilitate answers to related questions.

Overview Of Present Study

The present study examines the idea that the induced cognitive availability of a particular value would produce a corresponding increase in the accessibility of a semantically related attitude as proposed by Katz & Hass (1988). However, in the Katz & Hass study, no measure was taken of attitude accessibility. In the present experiment, respondents are timed as they respond to a ‘good’/‘bad’ enquiry about the connotation of an attitude. The aim is to provide evidence that activating a target value could increase the accessibility of a related attitude. Such changes in accessibility would be manifested in reduced response times to attitude items which follow a related value prime.

There was a three-second interval between subjects’ responses to the attitudinal statement and the presentation of the next value prime. Both the presence of the unrelated filler items and the three-second delay was assumed to prevent carry-over priming effects from earlier values. Priming effects are thought to decrease with wider gaps between a prime and a stimulus since the gap interferes with encoding of the stimulus in terms of the prime (Fiske & Taylor, 1991). As a result, attitude items were presented immediately after the value primes.

Hypotheses

The central prediction concerned the effect of the primed value on response times to related attitudes. It was hypothesised that reaction time would vary according to whether a value prime was related or unrelated to a subsequent attitude object. The fastest responses were predicted to occur when the attitude followed a value related to the attitude object and the slowest when the target followed semantically unrelated prime. This would lead to the further retrieval of evaluations related to the prime i.e. the prime and the attitude evaluation sharing the same valence.

In addition, the personal importance ascribed to a particular value is predicted to influence the extent to which it could serve as an effective prime. The degree, to which a specific value is considered to hold personal significance, rather than its mere endorsement, has been shown to influence its hierarchical relationship to attitudes (e.g. Rokeach, 1973; Katz & Hass, 1988; Homer & Kahle, 1988; Seligman &
Katz, 1996). For this reason, it is predicted that for those attitudes preceded by a related value prime, an individual's response time will be quickest when value primes are rated by participants as 'important' as opposed to 'not important'. It is predicted that the extent of value importance will have no effect on the response latencies to attitude items preceded by an unrelated value prime.

Method

Subjects
Subjects were 60 Rotarians, from Redcar Rotary Club, UK. Ages ranged from 35 to 65 years of age. This included 35 males and 25 females. Subjects took part in the experiment on a voluntary basis.

Stimuli (see APPENDIX C)
Stimuli consisted of eight attitude items. In addition each attitude was paired with one semantically related value item and one semantically unrelated value item. All value items were taken from the SVI (Schwartz, 1996).

Procedure

Pre-test
In order to select the related and unrelated value items to be paired with each attitude item, a pre-test was carried out using a group of 20 Rotarians who did not take part in the main experiment. Firstly, a pool of attitude items was developed covering a range of topics. The number of attitude items was restricted to eight in order to avoid participant fatigue. An effort was made to select attitudes which were unambiguous, and about which individuals would react spontaneously. To reduce possible variation in response times caused by different item lengths, all the attitude items were similar in length (within three letters).

Next, for each attitude item, three value items whose endorsement was considered to be consistent with that of the attitude and would suggest positive evaluation of the attitude i.e. a 'good' connotation were chosen. These were the 'related' values. A further three value items were selected whose endorsement was seen to be unrelated to that of the attitude.

Each attitude item was then presented in turn to each subject in the pre-test, along with the three semantically 'related' value items and three semantically 'unrelated' value items. For each attitude item, subjects were asked to choose from the three 'related' values, that which they considered to be most
'related' to the attitude item. Next, from the selection of 3 value items, they were asked to choose that which they considered to be the most 'unrelated'.

Taken across all subjects for each attitude item, the value most frequently regarded as related and that value item most frequently judged to be 'unrelated' were retained. The other items were disregarded. This resulted in two attitude-value pairings for each attitude item i.e. one in which the value was semantically related to the attitude and one in which the value was semantically unrelated. Conceptually, these value items then functioned as the 'related' and 'unrelated' value primes in the main experiment.

**Main experiment**

Items were presented one at a time on an IBM compatible computer. The value prime was presented first for one second and was immediately followed by its corresponding attitude item. The computer timed the delay between presentation of the attitude item and the point at which the subject indicated their response. The response valence was also recorded. Subjects were instructed to respond as accurately and as quickly as possible to each stimulus (see Appendix C).

Respondents were lead to believe that the experiment involved word recognition. They were told they should try to remember the phrase that flashed on the screen in lower-case script since they would be required to identify it later. Respondents were then told that a statement would appear in the centre of the screen in capitals. They were told to press one of two marked keys, one key to indicate that the connotation of the phrase was 'good' (positive / favourable) and another to indicate that the phrase was 'bad' (negative/unfavourable). After receiving the instructions both verbally and via an instruction sheet, subjects completed four practice trials in order to become familiar with the nature of the task and the response keys. When subjects had demonstrated that they could respond to the evaluative enquiry in less than 5 seconds, the experiment began.

For each condition, the eight attitude items were split into two groups. In condition 1, each of the four attitude items in the first group was preceded by its corresponding related value (as identified in the pre-test). By contrast, each of the attitude items in the second group was preceded by its corresponding unrelated value item. This pattern was reversed for subjects in condition 2 so that those attitude items, which were preceded by a related value in condition 1, were preceded by an unrelated value in condition 2 and vice versa. The order of these attitude items was then mixed so that each subject was presented with a related value-attitude pairing followed an unrelated value-attitude pairing.
The aim of this design was to help control for effects of differences inherent in the attitude items themselves, which might confound response latencies.

A three second interval was left between the subject’s response to each attitude item and the presentation of the next value prime. After completing the latency task, subjects completed a word recognition task in which they were asked to identify the value items presented by the computer out of a list of eight values. In each case, there were four items present, namely those which formed the related value-attitude pairings. These results are irrelevant to the present investigation and were not analysed.

Finally, subjects were asked to categorise the eight values that had appeared during the response latency task into two groups in terms of their importance to them as ‘guiding principles in your life’. Specifically, out of the list of eight values, subjects were asked to choose four values, which they regarded as the “least important values” and four, which they regarded as the “most important values”. This method was chosen to avoid respondents end-piling the values and not differentiating between their relative importance. Finally, subjects were debriefed and thanked for their participation.

Results

Raw response latencies were transformed in two ways before the data analysis was performed.

Outliers

Before carrying out the main analysis, outliers were removed from the response latency data. Extremely slow response times were reset to 5 seconds per participant and extremely quick responses, shorter than 0.25 seconds, were treated as missing.

Skewness

A reciprocal transformation of the latency scores was also performed to help eliminate distributional problems prior to analysis. As participants could take less than 1000ms to respond to some objects, the constant 1 was added to each latency before reciprocation (cf. Fazio, et al, 1986). Transformed latencies were used in all subsequent analyses.

The main analysis examined reaction times to target items, specifically it was predicted that response latencies would be smallest for:
1. Those attitude items preceded by a related value prime, compared to those preceded by an unrelated value prime.
2. Those attitude items preceded by a related value prime rated as important, as opposed to unimportant by the respondent. (The importance of unrelated value primes was not expected to influence response latencies to their corresponding attitude items.)

Three-factor mixed ANOVA

In order to rule out the possibility that a 2-way interaction between prime type and response latencies was due to the specific values used in each condition (rather than, as predicted, their 'relatedness' to the attitude items which they preceded), a 3-factor mixed ANOVA was carried out which took this between subjects factor into account.

It was an A x (B x C) design with three treatment factors. The between subjects factor was the subject condition (1 or 2). There were two within subjects factors, each with two levels, namely, subjects' perceptions of value importance (important/ not important) and type of prime (related/unrelated). This resulted in four within subject variables, each variable containing the data for a combination of value importance and type of prime. These variables were: related/ important; related/ not important; unrelated/ important and unrelated/ not important.

Tests of within subject effects revealed a significant main effect of type of value prime, $F(3,174) = 27.44, p < 0.05$, suggesting that the extent to which a value prime was semantically related to an attitude item influences response latencies to that item. There was no significant effect for the prime vs. experimental condition interaction, $F(3,174) = .205, ns.$, which suggests that the main effect of value prime was independent of the experimental condition. This was confirmed in a tests of between subjects effects which revealed no significant effect of experimental condition, $F(1, 58) = .0, ns.$

Since the 3-factor mixed ANOVA revealed an effect of type of prime but no effect of the experimental group, this between subjects factor was ignored and the data were collapsed over both experimental groups. A 2-factor within subjects ANOVA was carried out in order to examine the effects of prime type at its specific levels.

The factor 'relatedness' was found to be significant, $F(1,59) = 42.02, p < 0.05$. Likewise, the factor of 'importance' was found to be significant, $F(1,59) = 8.66, p = .005$. Furthermore, there was found
to be a significant interaction between these two factors, $F(1,59) = 14.66, p \sim 0$. This interaction is illustrated in the graph overleaf (Figure 1).

As can be seen in Figure 1, the mean response latency for attitude items preceded by a related value prime is smaller ($M=2.43s, SD = 1.68$) than that for those proceeded by an unrelated value prime ($M=3.47s, SD=1.34$). A t-test revealed that this difference was highly significant, $t=7.30, n=60, p\sim 0$. This suggests that the related value primes increased the response latencies of related attitudinal judgments.

Figure 1

Mean response latency as a function of relatedness of prime and value importance

In addition, in the related value prime conditions, those values judged to be personally important by participants are associated with quicker response times ($M=2.22s, SD=2.07$) than those judged to be not important ($M=2.63s, SD=1.15$). This difference was found to be highly significant, $t=4.27, n=60, p \sim 0$. In the unrelated value prime conditions, this pattern is not visible and there is only a very marginal difference in response latencies with the mean for important value primes being $3.48s$

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2 Results collapsed across both experiments
(SD=1.38) and that for unimportant primes, being slightly slower, M=3.48s (SD=1.32). As predicted this difference was not found to be statistically significant, t=.917, n=60, ns.

Discussion

In line with predictions, mean reaction times to attitude items were significantly influenced by the 'relatedness' of preceding value primes. Participants were significantly faster in making attitudinal judgments to those items preceded by a related value prime. This finding was interpreted as evidence that the activation of values through priming techniques, increased the accessibility of semantically related attitudes.

These results also confirm that attitudes and values might, be stored in a related network in memory. This finding is consistent with the empirical research of other theorists, such as Sherman (1987) with regard to general memorial constructs and those of Katz & Hass (1988) with regard to links between values and attitudes. Unlike the research of Katz & Hass (1988), however, this study measures attitude accessibility directly through response latency techniques. Furthermore, it presents evidence that the importance assigned to a particular value can influence its ability to activate a related attitude. The effect of the related value primes was found to be strongest for those value primes judged to be "most important" to the respondent. This finding is consistent with the work of previous research, which suggests that hierarchical links between values and attitudes exist for those values seen as personally important (e.g. Rokeach, 1967).

In order to avoid the problem of all value primes being rated as highly important by respondents, the present study asked participants to categorise half the value primes as being the 'most important' and half as 'least important'. This allocation did not allow the possibility that the respondent's subjective evaluations of these values might not be amenable to such a division. For example, a respondent might wish to place either more or less than four items in each category. However, debriefing did not reveal this issue to be considered problematic to respondents. Feedback during the task suggested that it is likely that the majority of subjects mentally ranked the values in order of importance and then used these ranking in order to divide the list of values into 'most important' and 'least important' groupings.
CHAPTER 5: STUDY 4

PERSUASION: THEORETICAL APPROACHES

Over the past 30 years, persuasion and attitude change have been among the most thoroughly investigated topics in social psychology (Thompson, Kruglanski, & Spiegall, 2000). Recent research has developed from two major theoretical frameworks: the elaboration likelihood model (or ELM, e.g. Petty & Cacioppo, 1986) and the heuristic-systematic model (or HSM, Chaiken, 1980; Chaiken, Liberman, & Eagly, 1989). Whereas previous research had shown little conceptual coherence, these dual-process models have provided a comprehensive theory to explain earlier ambiguous findings. They emphasise the processes that mediate attitude change and explain how the effects of the same variable could vary according to the situation and produce the same persuasion outcome by different processes in different circumstances.

Despite differing in some respects, the ELM and HSM both share the fundamental assumption that persuasion occurs via two qualitatively different "routes" or "modes". In the ELM these are the 'central' and 'peripheral' routes and in the HSM, the 'systematic' and 'heuristic' modes. Referring to the ELM specifically, attitude changes that result mostly from the processing of issue-relevant arguments (central route) are thought to show greater temporal persistence, greater prediction of behaviour, and greater resistance to counter-persuasion than attitude changes that result mostly from peripheral cues (Petty & Cacioppo, 1986).

The probability that a recipient will critically evaluate the arguments (i.e. the elaboration likelihood) is determined by both motivation and ability. When motivation and/or ability to process the message are relatively low, persuasion is more likely to occur as a result of simple inferences or associations based on peripheral cues in the persuasion context (e.g. credibility of source) to assess the validity of an argumentation rather than careful scrutiny of issue-relevant information (the central route to persuasion).

Variables can affect argument processing in a relatively objective or in a relatively biased manner. Relatively objective processing occurs when the variable either motivates or enables subjects to see the strengths of cogent arguments and the flaws in specious ones, or inhibits them from doing so. Relatively biased processing is thought to occur when the variable either motivates or enables subjects
to generate a particular kind of thought in response to a message, or inhibits a particular kind of thought.

The ELM suggests that if a manipulation enhances argument processing in a relatively objective manner, then subjects should show greater differentiation of strong from weak arguments. A message with strong arguments should tend to produce more agreement when it is scrutinised carefully than when scrutiny is low. The joint operation of these processes would result in people showing greater attitudinal differentiation of strong from weak arguments when processing is high rather than low. If argument processing is disrupted, due to reduced motivation or ability, argument quality should be a less important determinant of persuasion. In addition to subjects' attitudes being more differentiated when argument processing is high rather than low, subjects' thoughts should also show greater differentiation of arguments when processing is high rather than low. As processing increases, attitudes are more responsive to manipulations of argument quality and as processing decreases are less responsive.

The ELM suggests that although people aim to hold 'correct' attitudes, the amount and nature of elaboration in which they are motivated or able to engage to evaluate a message varies according to individual and situational factors (Petty & Cacioppo, 1986). Variables can affect the amount and direction of attitude change by (a) serving as persuasive arguments, (b) serving as peripheral cues, and/or (c) affecting the extent or direction of issue and argument elaboration (Petty & Cacioppo, 1986). Using cognitive response analysis and manipulations of argument strength, the ELM provides a broad framework for understanding the processes of persuasive communication (Petty & Cacioppo, 1986) and the effects of communicator, message and audience can all be analysed from this perspective.
The literature regarding a causal link between values and attitudes is extensive. Both the importance of values and their relevance to attitudes have been shown to be important factors in predicting attitude valence (e.g. Kristiansen & Zanna, 1988) and their resistance to persuasion (e.g. Ostrom & Brock, 1968). Attitude theorists have exploited this hierarchical relationship in order to induce attitude change through persuasive communications.

Effective persuasive appeals often contain arguments that address or invoke the values to which the issue is commonly linked. For example, Eagly & Kulsea (1997) discuss a study on abortion in which the content of persuasive appeals was derived from the arguments most commonly associated with pro-life and pro-choice groups, namely individual freedom and self-determinism, as opposed to sanctity of life and traditional family values. In addition to presenting value-based arguments, some persuasive techniques have involved simply activating the values associated with the desired attitude by increasing their accessibility. For example, research by Katz & Hass (1988) demonstrated that priming one of the values relevant to attitudes towards blacks, by asking them to respond to a set of items assessing these values, caused attitude changes consistent with these values.

The effect of alerting subjects to the value basis of particular attitudes has been shown to be most effective to the extent that values are judged to be personally important to the individual. In a study by Ostrom & Brock (1968), subjects rated the extent to which various values were reflected in aspects of a topic. Subjects were then presented with a counter-attitudinal message. Subjects who had previously judged the values as being personally important were significantly more influenced by this message than those who had rated the values as unimportant. This finding suggests that it is the association of a persuasive message with important values, which can influence the extent of attitude change, rather than the mere endorsement of a value, which may be relatively unimportant to the individual.

Successful persuasion has been shown to occur by increasing the accessibility of values related to the persuasive topic, whether this is through their implication within the persuasive message itself and/or through the manipulation of value accessibility. There has been little empirical investigation, however, into the mechanisms whereby this persuasion occurs. What is uncertain is the process underlying attitude change. Does a peripheral process induce change or does the accessibility precipitate central
route processing whereby the change is dependent on the cognitive elaboration of the persuasive message?

Drawing on the theoretical assumptions of the Elaboration Likelihood Model (Petty & Cacioppo, 1986), Fabrigar et al (1998) suggest that, like other variables, attitude accessibility could function to determine the extent of message elaboration in three ways depending on motivation and ability to elaborate. When motivation and/or ability to process a persuasive message are low, accessibility could determine the likelihood that an attitude would come spontaneously to mind. The attitude would then act as a peripheral cue for accepting the advocacy, if it is consistent with the value, or rejecting it, if it is inconsistent. Alternatively, when motivation and ability to elaborate are high, accessibility could control the likelihood that the attitude would come to mind and consequently bias elaboration in an attitude-relevant direction. However, in many cases motivation and ability are moderate and accessibility could determine the extent to which a person elaborates the appeal. If accessibility were high, any attitude change would therefore result from the careful elaboration of the arguments' merits. In contrast, change for attitudes low in accessibility may result from reliance on simple peripheral cues.

Fabrigar et al (1998) have provided empirical support for the hypothesis that the extent to which particular attitudes are accessible in memory influences persuasion by determining the extent to which people elaborate on persuasive messages. In one experiment, the accessibility of attitudes towards nuclear power was measured using response latencies. Participants were then presented with a persuasive message containing either strong or weak arguments in favour of nuclear power. In a second experiment, attitudes towards vegetarianism were experimentally manipulated by varying the number of times participants expressed their attitudes towards vegetarianism. Participants then read a pro-vegetarian persuasive message that contained either strong or weak arguments. In both experiments, argument quality was found to have a greater impact on persuasion when attitudes were high in accessibility than when their accessibility was low suggesting that heightened attitude accessibility leads to the enhanced elaboration of persuasive messages on such topics.

It is plausible that, as with attitudinal priming, one effect of value priming is to determine the extent of elaboration of persuasive appeals. Due to hierarchical links between values and attitudes, increasing value accessibility could lead to an increase in the accessibility of related attitudes. This is the process examined in study 3. Following Fabrigar et al (1998), this in turn, could lead to the increased elaboration of persuasive appeals when value accessibility is high compared to when it is low.
There have been a number of studies which suggest that a value prime could act as a ‘peripheral cue’ to precipitate attitude change. The study described earlier by Katz & Hass (1989) suggests that the activation of a value may strengthen those aspects of an attitude that are associated with the value without the presentation of a persuasive message. However, it is probable that although a value prime may draw attention to value-relevant information, some elaboration would be necessary in order for subjects to draw correct conclusions during a persuasion attempt (Eagly & Kulsea, 1997). Similarly, in his discussion of construct accessibility, Sherman (1987) suggests that although attention to a stimulus can be drawn automatically by a value prime, the processing of the message can be highly effortful and controlled. Increased value accessibility may therefore, motivate individuals to focus attention on relevant information in the persuasive message and critically elaborate on it.

The study outlined above, by Fabrigar et al (1998) suggests that increasing the accessibility of an attitude can influence attitude change due to the enhanced scrutiny of persuasive arguments related to that attitude. Attitude change in the direction of the persuasive appeals is more likely when argument quality is strong rather than weak. There is both theoretical and empirical evidence that, due to links between values and attitudes within the cognitive system, attitude change could similarly be induced by the activation of a related value. The increased accessibility of a particular value would result in the corresponding activation and increased accessibility of the more specific, related attitude. This in turn would lead to the increased elaboration of persuasive arguments, resulting in the acceptance of good quality arguments and the rejection of weak arguments.

**Overview Of Study**

*Research Aims*

The aim of this research is to explore one corollary of the conceptualisation of values — the process of attitude change. This is explored by assessing the interaction between the effects of value accessibility and argument quality. Elaboration is assessed through a manipulation of argument quality. It is hypothesised that variations in levels of elaboration resulting from accessibility will manifest themselves by producing an interaction between increased value accessibility and heightened argument quality. Specifically, it is expected that the enhanced persuasive impact of strong arguments, relative to weak arguments, would be greater when value accessibility is high compared to when it is low.

The accessibility of values is varied through a manipulation of the frequency of value expression. This manipulation is chosen because firstly, it is similar to that used by Fabrigar et al (1998) and secondly, it is the same as that used by Fazio (1995) to manipulate attitude accessibility. Consequently it fits the
conceptualisation of values adopted for the present study as associations between a ‘value object’ and its evaluation in memory. It is assumed that priming the target value (and therefore raising its cognitive availability) will raise the accessibility of theoretically corresponding attitudes. This will result in the increased or decreased endorsement of the persuasive message depending on whether the arguments are strong or weak. Furthermore, this affect will be mediated by individual ratings of value importance.

This study includes two experiments, which focus on attitudes towards two political issues, namely the introduction of a national identity card (experiment 1) and the prosecution of war criminals (experiment 2). A value survey, the SVI (Schwartz & Bilsky, 1990), contains questions tapping participants’ endorsement of values relevant to these issues. The content of persuasive appeals is written systematically to invoke these values. In experiment 1, the message in favour of the introduction of a national identity card appeals to the value of individual freedom. It was believed that attitudes sympathetic to the introduction of national identity cards would be negatively correlated with the endorsement of this value. In experiment 2, the message in favour of the prosecution of war criminals appeals to the value of social justice. It is predicted that attitudes sympathetic to the prosecution of war criminals will be positively correlated with the value of social justice. It is assumed that values of social justice and individual freedom constitute values of high importance to the majority of individuals and in fact, Van Deth & Scarbrough (1995, p 35) propose that the values of freedom and justice are “banners under which one can fight in all circumstances”.

According to Eagly & Kulsea (1997), effective persuasive communication by systematic processing presumes that messages are ‘understandable’ and are presented in situations that do not restrict recipient’s ability to process them. It is expected that in the current study, these conditions will be met. The persuasive messages are relatively undemanding, there are no time pressures for task completion and an effort is made to keep distraction to a minimum.

Based on the logic just described, a number of specific predictions are developed. It is expected that increasing value accessibility will be associated with a greater impact of argument quality on post-message attitudes. Since the passages highlight their link to the messages, it is assumed that recipients will be motivated to elaborate the persuasive messages. This should occur because due to spreading activation, participants in the low value accessibility condition should have related attitudes that are lower in accessibility and should engage in relatively little elaboration of the persuasive message. Thus, they should be only modestly influenced by argument strength in the message. In contrast, participants in the high accessibility condition should have related attitudes that are higher in
accessibility and should engage in greater elaboration of the persuasive message and thus they should be more influenced by the strength of the arguments.

The SVI defines social justice as “correcting injustice, care for the weak”. This descriptor is quite vague. The term is used more specifically, in the context of this experiment, to refer to the administration of the law according to accepted principles. This interpretation is seen as being compatible with the broad accepted definition of justice as “to treat or judge fairly” (The Collins Concise English Dictionary, McLeod & Hanks, 1982). For example, using Eagly & Chaiken’s (1993) terminology, psychological links could be based on the observation that people involved in upholding the law and achieving social justice generally support crime prosecution. In this sense, social justice could be conceptualised as the more abstract and general ‘attitude’ in the hierarchy encompassing related attitude objects (e.g. war crime prosecution). Heightened arousal of the social justice concept through repeated activation would, by means of spreading activation, arouse the related attitude in the cognitive network.

The study was a 2 (value accessibility: high vs. low) x 2 (argument quality: high vs. low) factorial design. In each experiment, subjects are assigned to one of four experimental conditions, namely, high accessibility/strong argument condition; high accessibility/weak argument condition; low accessibility/strong argument condition and low accessibility/weak argument condition.

It is expected that high value accessibility will be associated with a greater impact of argument quality on post-message attitudes regardless of whether the message was counter-attitudinal (as in experiment 1) or pro-attitudinal (as in experiment 2) following Fabrigar et al (1998). Specifically,

1. There would be a main effect of value accessibility i.e. attitude change would be greater for those subjects in the high accessibility condition.
2. There would be a main effect of argument quality i.e., attitude change would be highest for those subjects in the strong argument condition
3. There would be an interaction effect for value accessibility and argument quality i.e. attitude change would be highest for those subjects in the high accessibility, good quality argument condition.
Method

Participants
Participants were 160 sixth form students from a sixth form college in London (76 males and 84 females). Ages ranged from 17 to 19 years. Students took part in the experiment as part of a requirement for a general studies course.

Measures (see Appendix D)

Attitudinal Survey
This contained thirty attitude objects, (one target attitude item and twenty-nine filler items). Items were selected from a range of topics including education, culture, the law, health, science and technology, politics and morality. The same survey was used in both experiments and administered to subjects in all four experimental conditions. The target attitude object for experiment 1 (“A national ID card encoding personal information (e.g. photo, fingerprint, criminal and bank details, passport, driving licence”) should be introduced by the Government”) was presented in the 24th position. For experiment 2 the attitude object (“the prosecution of war criminals is a positive policy”) was presented in 23rd position. Subjects were required to respond using a five-point Likert type scale anchored by the points “strongly disagree” to “strongly agree”.

Value surveys
For each experiment two value surveys were produced, one for subjects in the low accessibility condition and one for subjects in the high accessibility condition. The items contained in all surveys were taken from two dimensions of the S.V.I (Schwartz and Bilsky 1990). The surveys contained both the specific target item being explored and the filler items consisted of all other values contained in the motivational dimension from which the target value was derived plus those in the opposing dimension. For experiment 1, the target value was individual freedom whilst for experiment 2 it was social justice. Each measure asked subjects to report their values on 9-point scales with different end points (i.e. disapprove/approve, bad/good, unnecessary/necessary, inappropriate/appropriate, and foolish/wise). For the high accessibility conditions the target item was listed five times, once in each semantic differential scale. For the low accessibility conditions the target item appeared only in the first desirability scale. For both conditions, the remaining value items were distributed randomly between all five scales.
Readability Test

This was identical for subjects in all four conditions. This section contained questions tapping various stylistic aspects of the text. In addition, one question acted as a manipulation test of argument quality asking participants to rate how persuasive they found the arguments contained in the article. The last question also asked subjects to rate their attitudes towards the persuasion issue on a 5-point scale. This question was identical to that presented earlier in the attitudinal survey.

Persuasive message

Two booklets were produced. One which contained a fictional editorial on the introduction of national identity cards (experiment 1) and one containing a fictional editorial on the prosecution of war criminals (experiment 2). The first page of each booklet provided a cover story suggesting that the purpose of the task was to assess the quality of samples of writing. The following page contained the one-page editorial arguing in favour of each proposal in which the arguments developed from a pre-test (see below) were embedded.

Procedure.

Pre-test: A pre-test, based on that proposed by Petty & Cacioppo (1986) was conducted on a group of 20 undergraduate students in order to construct the persuasive arguments. A pool of intuitively strong and weak arguments was developed on both the issue of the introduction of a national identity card and also on the prosecution of war criminals. Some arguments related to their corresponding target values i.e. individual freedom and social justice, whereas others were unrelated. Participants were asked to think carefully about the arguments and rate each on three scales of 1 to 5 according to their persuasiveness. For example, they were asked, “to what extent do you feel the communication was convincing?” “To what extent do you feel the communication made its point effectively”?

For each argument, the two scores across each subjects were averaged to produce an overall rating of persuasiveness. The four strongest arguments, with a mean rating of 4.05 (related to the target value) and the four weakest arguments, with a mean of 1.85 (unrelated to the target value) were selected. For example, for experiment 1 a strong argument was "identity cards represent a major intrusion into the privacy of the individual". An example of a weak argument was "transactions would be slowed down if people forgot or mislaid their cards". In experiment 2, an example of a strong argument was "war crime trials are based on the fundamental principles of justice and go beyond national laws or legislative bodies". An example of a weak argument was "war crime trials encourage
public awareness of the past since many of the trials involve crimes committed during the Second World War". These arguments were embedded within the editorials.

Main study: The sessions were conducted in groups ranging from 10 to 15 people. Participants were given a cover story similar to that of Fabrigar et al. (1998). Specifically they were told that the purpose of the experiment was to evaluate the quality of various written passages. The experiment consisted of five stages: (1) an attitudinal survey; (2) a value survey; (3) filler task (4) presentation of an editorial (persuasive message) and (5) readability survey.

Firstly all participants completed the attitudinal survey. The survey contained one item relating directly to the target issue of each experiment. The survey was presented as part of an ostensibly separate task for a different researcher. Secondly, all participants completed one of two Value Surveys that acted as the priming manipulation. The accessibility of the target value was experimentally manipulated by having half of the participants express their evaluations of the target value five times (high accessibility condition) and the other half express their evaluation only once (low accessibility condition). Numerous experiments have shown that as the frequency of expressing an attitude increases, the accessibility of that attitude is enhanced (see Fazio, 1995). It is assumed that, due to conceptual similarities between values and attitudes, manipulating the frequency of value expression would produce a comparable effect on value accessibility.

On completion of the value survey, participants completed a short cognitive filler task unrelated to the experiment. Next, all participants were given a booklet. The first page of the booklet provided the cover story suggesting that the purpose of the task was to assess the quality of samples of writing. On the following page participants were presented with a one-page editorial arguing in favour of either the introduction of national identity cards (experiment 1) or the prosecution of war criminals (experiment 2).

Half the participants in each accessibility condition were randomly assigned to receive a version of the editorial that was strong and convincing when people thought carefully about the information (strong argument condition). The other half of the participants received a version that contained arguments that were weak and unconvincing (weak argument condition). This resulted in four experimental conditions for each experiment (high accessibility, strong argument condition; high accessibility, weak argument condition; low accessibility, strong argument condition and low accessibility, weak argument condition). The strong and weak versions of the message also differed in relation to the target
variables. The strong arguments were all related to the target values of *individual freedom* (experiment 1) and *social justice* (experiment 2), whilst the weak arguments were unrelated to these values.

Following the presentation of the persuasive message, participants completed a survey concerning stylistic aspects of the article. One question acted as a manipulation check for argument quality — subjects were asked to rate how convincing they found the arguments in the editorial to be. Participants were then asked to respond to an enquiry concerning their attitude towards the persuasion issue in order to assess any attitudinal change that may have occurred. Finally, subjects were debriefed.

**Results**

**Attitude Change**

The effects of both value manipulation and argument quality on the extent of attitude change and more specifically, the elaboration of persuasive messages were examined. If the experimental manipulation of value accessibility was successful in influencing the extent of elaboration of the persuasive message, then a significant interaction between value accessibility and argument quality should be obtained for attitude change. To test this, a 2 (value accessibility: high vs. low) x 2 (argument quality: strong vs. weak) ANOVA was conducted on attitude change.

For experiment 1, participants were asked the extent to which they agreed with the introduction of a national identity card. The persuasive message presented arguments against its introduction. Therefore, an attitude change toward a more negative attitude concerning identity card introduction was coded as a positive change, and an attitude change toward a more negative attitude was coded as a negative change. For experiment 2, participants were asked the extent to which they agreed with the prosecution of war criminals. The persuasive message presented arguments for their prosecution. Therefore an attitude change toward a more positive attitude was coded as a positive change and an attitude change toward a more negative attitude was coded as a negative change. The results of each experiment were analysed separately.

**Experiment 1: The Introduction of National Identity Cards**

The mean attitude change for strong arguments was .42 (SD = .93) and for weak arguments was .21 (SD = 1.23). The results of the ANOVA, however, revealed that the main effect for argument quality was not significant, F (1, 76) = 3.11, ns, suggesting that strong arguments in favour of the
The introduction of national identity cards did not produce significantly more favourable attitudes than did weak arguments.

The mean attitude change for high accessibility (M = .325, SD=1.27) was higher than that for low accessibility (M = .225, SD = 1.03), as predicted. However, there was no significant main effect for value accessibility, F (1,76)= .154, ns. This suggests that the value prime had no significant effect on attitude change.

For subjects in the high accessibility conditions, the mean attitude change when argument quality was strong was .65 (SD = 1.42) and when argument quality was weak was .029 (SD= 1.03). For those in the two low accessibility conditions, the mean attitude change when argument quality was strong was .35(SD =1.04) and when argument quality was weak was .1 (SD= 1.02). The predicted interaction between value accessibility and argument quality was also not reliable F (1,76)= .615, ns. It was assumed that priming a given value would raise the accessibility of the theoretically corresponding attitude and result in increased attitude change. However, this would only occur to the extent the participants perceived the value as being personally important. However, even when value strength was treated as a covariate, the interaction remained insignificant F (1, 75) =. 664, ns. This may be because most subjects perceived individual freedom to be important or supremely important or alternatively, that identity cards are not related to the value of individual freedom in the way assumed.

Figure 2: The Introduction of National Identity Cards
Attitude change as a function of value accessibility & argument quality

The means associated with this interaction are shown in figure 2 above. As can be seen in the figure, when value accessibility is low, there is a difference in the extent of attitude change for strong and
weak arguments, with strong arguments producing more attitude change than weak arguments as would be expected if some message elaboration had taken place. When value accessibility is high, strong arguments result in greater attitude change but decreased attitude change for weak arguments, suggesting that these arguments were considered weak and so their elaboration resulted in lower levels of persuasion. This pattern suggests that, despite a lack of statistical significance, increased value accessibility may, to a limited degree, have promoted some message elaboration, although the F-ratio suggests that this effect must be weak.

Experiment 2: The prosecution of War Criminals

The mean attitude change for strong arguments was .73 (SD = 1.28) and for weak arguments was .28 (SD = 1.20). The results of the analysis revealed that the main effect for argument quality was not significant, F (1, 76) = 3.42, ns, suggesting that the strong arguments in favour of war crime prosecution did not produce significantly more attitude change than weak arguments. The mean attitude change for high accessibility was .700 (SD = 1.38) and for low accessibility was .200 (SD = 1.04). Nevertheless, the main effect for value accessibility was not significant, F (1, 76) = 3.42, ns, suggesting that the prime had little effect on persuasion.

For high accessibility conditions, the mean attitude change when argument quality was good was 1.05 (SD = 1.50) and when argument quality was weak was .35 (SD = 1.18). For low accessibility conditions, the mean attitude change when argument quality was strong was .35 (SD = 1.23) and when argument quality was weak was .05 (SD = .83). The predicted interaction between value manipulation and argument quality was also not significant F (1, 76) = .548, ns. Likewise, when value strength was treated as a covariate, the significance of the interaction remained insignificant F (1, 76) = .728, ns. This relationship is illustrated in figure 3 below:

Figure 3: The Prosecution of War Criminals
Attitude change as a function of value accessibility & argument quality
As can be seen in the figure, when value accessibility is low, there is the suggestion of a difference in the extent of attitude change for strong and weak arguments although this is not significant. This suggests that there may be some elaboration of message arguments with weak arguments being associated, on average, with less attitude change than strong arguments.

This pattern becomes more pronounced when accessibility is high, when strong arguments produced a greater increase in attitude change than did weak arguments. So, although the difference was not significant, participants in the high value accessibility condition appear to have engaged in more extensive scrutiny of the persuasive message than participants in the low accessibility group.

To sum up, none of the main effects for either experiment or the interaction effects are significant. However, despite the study being based on relatively few cases (20 in each condition) the analyses did reveal a general tendency for attitude change to be greater when argument quality was strong and more particularly when value accessibility was high.
Analysis of both experiments in the present study showed only a tendency that increasing the accessibility of a target value would lead to increased attitude change towards a semantically related issue due to the increased elaboration of persuasive arguments. In each experiment, the quality of the arguments contained in the persuasive message did not have a significant impact on the extent to which people were persuaded. Likewise, the manipulation of value accessibility did not significantly affect the level of attitude change. More importantly, there were no interaction effects of value accessibility and argument quality, even when individual ratings of value importance were taken into consideration. However, despite a lack of statistical significance, consistent with the initial expectations, the analyses did reveal tendencies for attitude change to be greatest when argument quality was strong and value accessibility was high. The lack of significance in these analyses may be due, in part, to the small sample size in each condition. However, it is possible that a number of other factors were suppressing the effect of the value prime.

Although it is possible that repeated value expression might not have effectively raised value accessibility, this possibility is thought to be unlikely since it is well documented in the accessibility literature that the level of construct accessibility is increased by the recent and frequent activation of a construct. Furthermore, a number of theorists have successfully induced attitude change using similar methods to manipulate attitude accessibility (e.g. Fazio et al, 1982; Powell & Fazio, 1984).

It is more plausible that increased value accessibility may not have activated the corresponding attitude. The values and attitudes were selected on the basis of a pilot study in which subjects indicated an association of the value primes with the corresponding attitude items. However, there may have been individual differences in this perceived association. The value would induce a particular attitude only to the extent that subjects perceived that the attitude offered an appropriate way to express the value.

The Value-Justification Hypothesis (Eiser, 1987), states that people with opposing attitudes towards an issue appeal to different general values to explain their attitudes. This is reflected in individual differences in the perception of how relevant various values are to a particular attitudinal issue. Furthermore these differences are likely to occur over and above differences that individuals place on the importance of values. Likewise, McGrath (1985) suggests that in social issues, proponents of both
sides often discuss the righteousness of their attitudinal stance by appealing to different values and such issues may become ‘social dilemmas’.

This principle is illustrated empirically in a study by Kristiansen & Zanna (1988) in which subjects completed measures of their attitudes towards abortion and nuclear weapons. They ranked both the importance of 18 values (Rokeach, 1967) and the relevance of each towards both issues. It was found that subjects with negative attitudes and those with positive attitudes differed in the values they regarded as relevant to each issue. For example, subjects who favoured nuclear weapons regarded national security as more relevant in comparison to subjects opposed to nuclear weapons who perceived ‘wisdom’ as a more relevant value. These effects were found to be independent of differences in value importance. Although these studies concern individuals with attitudes in different halves of the attitude continuum, it is possible that individuals with attitudes of the same valence also see a number of values as being relevant to a particular attitude issue.

In the present study, it is conceivable that values other than individual freedom and social justice may have been influential in participants’ attitudes towards the introduction of national identity cards and the prosecution of war criminals respectively. For example, an attitude against the introduction of national identity cards may, for some individuals, have derived its strength from the value of individual freedom. However, those in favour may have focused on the values of social order (since many forms of crime depend on individuals claiming to be someone else (e.g. tax evasion) and verification by police would be made easier or national security) ID cards would help avoid illegal immigration).

Whilst an attitude in favour of the prosecution of war criminals may derive its strength from inter(attitudinal links to the value of social justice, values such as a world at peace, national security and social order, may be equally salient. An argument in favour of war crime prosecution is that prosecution would demonstrate that war atrocities would be punished and would, as a result, discourage future crimes. Attitudes opposing it may result from the endorsement of the value of forgiveness (the prosecution of elderly suspects may generate feelings of sympathy since many were generally very young, junior and possibly in fear of the consequences of non-co-operation). Specific relevant cases may be brought to mind such as the case of General Pinochet, whose prosecution, Margaret Thatcher opposed as a result of his help during the Falklands conflict. In this case, the values of loyalty, forgiveness, reciprocation of favours and true friendship may have been salient. Unfortunately, the data collected does not enable a judgement to be made as to whether such factors influenced participants in the present study.
It is also possible that individuals with opposing views may see the same values as relevant but interpret their implications for the attitude issue in different ways. For example, *social justice* could be seen as relevant to issues regarding the prosecution of war criminals but could imply that prosecution is due to unfair trial procedures and false prosecutions. For some individuals, the value of *forgiveness* rather than *social justice* may have been more prominent in the issue related to the prosecution of war criminals. So, the value manipulation may have failed to raise the attitudes related to the persuasive arguments and in addition, personal perceptions of the relevance of particular values to the persuasion issues may have varied.

In future studies, subjects could be asked to indicate the extent to which particular values are relevant to a particular attitude. It would be expected that those subjects who rated the target value as both personally important and as relevant to the attitude issue would be significantly more influenced by the manipulation of value accessibility and significantly more or less influenced by argument quality depending on whether elaboration was predicted.

In addition, although the manipulation of value accessibility may have been successful in increasing the value accessibility and activating the structurally related attitude, this value may not have functioned as a direct determinant of attitude change. The initial attitude that existed even prior to reception of the message is another potentially available basis for judgement (Sherman, 1987). The topics were likely to be of low personal relevance to the majority of students and this may have resulted in low levels of motivation to process the related persuasive arguments irrespective of the priming manipulation.

Finally, initial attitudes towards the two attitude topics were mixed in terms of both extremity and valence. Ceiling effects existed for those individuals whose initial attitudes were of the same valence as the persuasive communication. For example, in experiment 1 in which the persuasive arguments were against the introduction of a national identity card, the initial attitudes of 23% of subjects were already negative and this imposed a limit on potential attitude change, which could be indicated following the persuasive communications. Similarly, in experiment 2, in which persuasive arguments were in favour of the prosecution of war crimes, 24% subjects expressed initial attitudes in favour of prosecution. This problem could be avoided in future studies by choosing an attitude topic in which there was consensus of opinion for the majority of subjects and the persuasive arguments were designed to persuade subjects to change attitude valence.
CHAPTER 6: STUDY 5

Introduction

Study 5 was a conceptual replication of study 4. In this study however, the target attitude concerned university tuition fees. This issue was selected since it was believed to be of personal relevance and interest to sixth form students, many of who would continue onto further education. It was predicted that, due to the negative financial implications of tuition fees, there would be near universal opposition to the fees.

In addition to a change of topic, there were a number of procedural modifications. Firstly, whereas in the previous study, value primes had been selected during a pilot study as relevant to the attitude issue, using a separate sample of students, the present study takes into consideration individual differences in perceived value relevance. Participants are asked to rate these values according to their relevance to tuition fees. Secondly, unlike in the procedure described by Fabrigar et al (1998), no filler task was included in the study. It was believed that the filler task used in study 4 might have weakened the effect of the value manipulation. Indeed, Sherman (1987) stresses that the effect of increased accessibility decreases with the time lag between a prime and its target. Study 5 consisted of two experiments. The attitude topic was the same for both experiments, but the value primes differed. In experiment 1, the value primes were social justice and equality; whilst in experiment 2, the prime was the value of success.

Hypotheses

It is predicted that:

1. Increased value accessibility would lead to the increased elaboration of persuasive arguments. This would manifest itself by the differential impact of strong and weak arguments.

2. This effect would be mediated by the individual ratings of value importance and relevance to the attitude issue.

3. There would be a main effect of argument quality, with more positive attitude change occurring for strong argument conditions and significantly less positive attitude change occurring for weak argument conditions.
Method

Participants.
Participants were 120 sixth form students (63 males, 57 females) from a local college. Ages ranged from 17 to 19 years. Students took part in the experiment as part of a general studies course.

Measures (see Appendix E)

Pre-test attitudinal Survey.
Attitudes were measured by having subjects report their attitudes towards twelve attitude objects on a “News Opinion Survey” which included a question relating to attitudes towards tuition fees. Subjects were required to respond using a five-point scale anchored by the points “completely disagree” to “completely agree”.

Post-test attitudinal measure
The second attitudinal survey contained questions related to further education, which contained an identical question relating to tuition fees as the pre-test attitudinal survey. This was presented as part of an ostensibly different survey for the head of sixth form studies.

Value survey
There were four versions of the Value Survey developed. For each experiment, one low accessibility version (in which the value prime appeared only once) and one high accessibility version (in which the value prime appeared five times). The items contained in the value survey were taken from two dimensions of the Schwartz Value Inventory (S.V.I) (Schwartz and Bilsky 1990), namely achievement and benevolence. The survey contained the specific values used in the accessibility manipulation, as well other ‘filler’ items. For example, for experiment 1, the target values were equality and social justice, both from the benevolence dimension, whilst for experiment 2 the value of success was taken from the dimension of achievement. The questionnaire contained semantic differential items. The number of times that a given object or issue appeared on the questionnaire (each time followed by a different semantic differential scale) was varied experimentally, one in the low accessibility condition and five in the high accessibility condition, in order to induce the subjects to rehearse the association between an object and an evaluation.
Readability Test
This was the same as that used in study 4 with the omission of the question relating to the attitude issues. It contained questions tapping various stylistic aspects of the text.

Value Relevance Measure
A value relevance scale was developed in which subjects rated the relevance of all values contained in the value survey according to the attitudinal issues relevant to each experiment. Ratings were made on a 5-point scale anchored by −2 (completely irrelevant) to +2 (completely relevant).

Procedure.
Pre-test: A pre-test, based on the procedure proposed by Petty & Cacioppo (1986), was conducted on a group of 20 undergraduate students in order to construct the persuasive arguments. A pool of intuitively strong and weak arguments was developed in favour of university tuition fees. For experiment 1, these arguments were based on the values of social justice and equality and for experiment 2; the arguments were based on the value of success. Participants were asked to think carefully about the arguments and to rate each on two scales ranging from 1 to 5 according to their persuasiveness. They were asked, “To what extent do you feel the communication was convincing?” “To what extent do you feel the communications made its point effectively?”

For each argument the scores across subjects were averaged to produce an overall persuasiveness rating. The four strongest arguments (mean = 4.15) relating to the target value and the four weakest (mean = 2.33) arguments were selected. For example, in experiment 1, arguments were based on the values of social justice and equality. An example of a strong argument is “university education is a fantastic opportunity for any individual. It is therefore reasonable that students make a contribution towards its cost”. An example of a weak argument is “university education benefits most students. It seems reasonable that all students should make a contribution to the cost”. In experiment 2, arguments appealed to the values of achievement and success. An example of a strong argument is “It is the students themselves who will benefit directly from their university education – earning as much as 50% more on average than a non-graduate in later life. The payment of tuition fees is therefore an extremely worthwhile investment”. An example of a weak argument is “Graduates may benefit directly from their university education. Some graduates earn up to 15% more than non-graduates in later life”.
Main study: The study was a 2 (value accessibility: high vs. low) x 2 (argument quality: high vs. low) factorial design. The sessions were conducted in groups ranging from 10 to 15 people. Participants were given a cover story similar to that of Fabrigar et al. (1998). Specifically they were told that the purpose of the experiment was to evaluate the quality of various written passages. The experiment consisted of six stages: (1) an attitudinal survey; (2) a value survey; (3) test of relevance (4) presentation of an editorial (persuasive message); (5) readability survey; and (6) repeated attitudinal survey.

Firstly, all participants completed the attitudinal survey assessing their attitudes on a number of recent news events, including one questions relating to the attitude issue. All measures used five-point scales. Secondly, participants completed the appropriate Value Survey for each experiment. For each experiment, half of the participants were randomly assigned to low value accessibility group by the random distribution of test booklets. Because the instructions and procedure were identical for all conditions, more than one condition was run simultaneously during an experimental session. These people received a version of the survey that contained just one measure of the target value(s) (social justice and equality for experiment 1 and success for experiment 2). The other half of the participants (i.e. the high accessibility group) received a version of the survey in which four additional measures of the target value were embedded among the survey. Each of these measures asked subjects to report their values on scales with different end points (i.e. disapprove/approve, bad/good, unnecessary/necessary, inappropriate/appropriate, foolish/wise).

On completion of the value survey, all participants completed a booklet containing the editorial concerning student tuition fees. The first page of the booklet provided the cover story that the purpose of the task was to assess the quality of samples of writing. On the following page, participants were presented with a one-page editorial arguing in favour of tuition fees. Half the participants were randomly assigned to receive a version of the editorial that was strong and convincing. The other half of the participants were randomly assigned to receive a version that contained arguments that were weak and unconvincing.

Following the message, participants completed a seven-item survey concerning stylistic aspects of the article in which respondents had to choose from a number of response options. One question acted as a manipulation for argument quality — subjects were asked to rate how convincing they found the arguments in the editorial to be. Finally participants were asked to complete an attitudinal survey concerning further education, which contained a question concerning their attitudes towards tuition
fees. The survey was presented as part of an ostensibly separate task for a different researcher. Finally participants were debriefed as to the nature of the study.

Results

The effects of both value accessibility and argument quality on the extent of attitude change and more specifically, the elaboration of persuasive messages are investigated. The effects of value importance and relevance are also examined as confounding factors in this process. If the experimental manipulation of value accessibility was successful in influencing the extent of elaboration of the persuasive message, then a significant interaction between value accessibility and argument quality should be obtained for attitude change. To test this, a 2 (value accessibility: high vs. low) x 2 (argument quality: strong vs. weak) ANOVA was conducted.

Participants were asked to rate the extent to which they agreed with university tuition fees. The persuasive message presented arguments in favour of tuition fees. Therefore, change towards a more positive attitude was coded as a positive change, and an attitude change toward a more negative attitude was coded as a negative change.

Experiment 1

Attitude change
As predicted, the majority (72.8%) of respondents had an initial negative attitude towards tuition fees (i.e. scale ratings of −2 or −1). There was a positive increase in attitudes in the direction of the persuasive message for 45.6% of subjects whilst only 4.9% had a shift in attitudes towards more unfavourable attitudes. However, not all change indicated a shift from initial negative to positive attitudes.

Argument quality main effect
The mean attitude change for strong arguments was .775 (SD = .93) and for weak arguments was .300 (SD = .53). The results of the analysis revealed that this difference was significant. There was a significant main effect for argument quality, F (1, 76) = 8.25, p < .05, suggesting that strong arguments in favour of an increase in tuition fees produced significantly more favourable attitudes than did weak arguments. When both importance and relevance were treated as covariates, this effect was found to be stronger, F (1, 74) = 7.31, p < .05.
Argument quality manipulation check
A T-test was carried out to compare individuals’ mean Positivity ratings for both ‘strong’ arguments and ‘weak’ arguments, t = 3.01; df = 9; p < 0.05. These results suggest that the argument quality manipulation had been successful; ‘strong’ arguments were perceived to be more persuasive than ‘weak’ arguments.

Accessibility main effect
The mean attitude change for the high accessibility condition was .650 (SD = .78) and for low accessibility was .425 (SD = .80). However, no significant main effect for value accessibility was found, F (1, 76) = 1.85, ns. This suggests that the value prime had no significant effect on attitude change. Likewise, when both importance and relevance were treated as covariates, accessibility was found to have no significant effect F (1, 74) = 1.82, ns.

Interaction effects
For high accessibility conditions, the mean attitude change when argument quality was strong was 1.05 (SD = .83) and when argument quality was weak was .25 (SD = .47). For low accessibility conditions, the mean attitude change when argument quality was strong was .50 (SD = .97) and when argument quality was weak was .35 (SD = .59). The predicted interaction between value manipulation and argument quality was nearly significant F (1, 76) = 3.86, p = .053. However, when both importance and relevance were treated as covariates, quality was found to have a stronger effect F (1, 74) = 4.05, p < .05. The cell means associated with this interaction are shown in figure 4 below.

Figure 4. Attitude change as a function of value accessibility & argument quality

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1 In this figure, both value relevance and value importance are treated as covariates.
Figure 1 clearly illustrates the interaction effect of accessibility and argument strength on level of attitude change. Argument strength has a major effect on attitude change as shown by the difference in level of attitude change for both strong and weak arguments. The mean attitude change for strong arguments is significantly higher than that for weak arguments ($t = 2.45; df = 79; p < .025$). This pattern is especially evident in the high accessibility condition ($t = 2.92; df = 39; p < .025$) compared to the low accessibility condition ($t = 1.98; df = 39; ns$).

Increased accessibility does enhance attitude change for strong arguments but actually causes a decrease in attitude change for weak arguments. The mean attitude change for the high accessibility, strong argument condition was found to be significantly greater than that for the high accessibility, weak argument condition ($t = 2.64; df = 39; p < .05$). The pattern of observed persuasion means suggests that, as predicted, objective central processing of the persuasive message had occurred.

**Relative Variance accounted for by both covariates**
In the above analyses, the reported partial Eta squared values for the two factors differed. The value for relevance was .059 and that for importance was .015. This suggests that the relevance of the value primes accounted for greater variance in these effects than did their perceived personal importance.

**Experiment 2**

**Attitude change**
As predicted, the majority (73.8 %) of respondents had an initial negative attitude towards tuition fees. There was a positive increase in attitudes in the direction of the persuasive message for 53.1 % of subjects, although not all change indicated a shift from negative to positive attitudes.

**Main effect of Argument quality**
The mean attitude change for strong arguments was .933 ($SD = 1.17$) and for weak arguments was .425 ($SD = .88$). The results of the ANOVA revealed that the main effect for argument quality was significant, $F (1, 76) = 5.10, p < .05$ suggesting that strong arguments in favour of an increase in tuition fees did produce significantly more favourable attitudes than did weak arguments. When value importance and relevance were included in the interaction, the effect of argument quality decreased, although it was found to be close to significance $F (1, 76) = 3.72, p = .058$. 
Manipulation check
A T-test was carried out to compare individuals' mean Positivity ratings for both 'strong' arguments and 'weak' arguments, \( t = 2.86; \text{df} = 9; p < 0.05 \). These results suggest that the argument quality manipulation had been successful; 'strong' arguments were perceived to be more persuasive than 'weak' arguments.

Main effect of accessibility
The mean attitude change for high accessibility was .875 (SD=1.05) and for low accessibility was .483 (SD = 1.18). The main effect for value accessibility was not significant, \( F (1, 76) = 3.03, \text{ns} \). This suggests that the value prime had no significant effect on attitude change. Again, this main effect did not reach significance when value importance and relevance were treated as covariates, \( F (1, 74) = 2.84, \text{ns} \).

Interaction effects
For high accessibility conditions, the mean attitude change when argument quality was strong was 1.35 (SD = 1.04) and when argument quality was weak was .40 (SD = .83). For low accessibility conditions, the mean attitude change when argument quality was strong was .52 (1.18) and when argument quality was weak was .45 (SD = .94). The predicted interaction between value manipulation and argument quality was not quite significant \( F (1, 76) = 3.85, \text{ns} \). However, when both importance and relevance were treated as covariates, a significant interaction was found between argument quality and accessibility level, \( F (1, 74) = 4.45, p < .05 \).

![Figure 5: Attitude change as a function of value accessibility & argument quality](image)

\(^2\) As in figure 1, both value relevance and value importance are treated as covariates.
The means associated with this interaction are shown in figure 5 above. For high accessibility conditions, attitude change is in the direction predicted by the hypotheses. Value accessibility was found to enhance message processing with attitude change being significantly greater for the high accessibility condition than the low accessibility condition ($t = 3.01; df = 79; p < .05$). Subjects' attitudes showed more discrimination of strong from weak arguments in the high accessibility condition. Participants in the strong argument condition showed, on average, a greater decrease in post message attitudes (indicating persuasion) than those in the weak argument condition and this difference was found to be significant ($t = .326; df = 9; p < .05$). Furthermore, the pattern of ‘no-difference’ in means for low accessibility is in line with predictions i.e. argument quality has little effect on the extent of attitude change when value accessibility was low.

Relative Variance accounted for by both covariates

In the above analyses, the reported partial Eta squared values for the two factors differed. The value for relevance was .020 and that for importance was .016. This suggests that, as in experiment 1, the relevance of the value primes accounted for relatively more variance in these effects than did their perceived personal importance.

Discussion

It was hypothesised that increases in accessibility would be associated with either more or less persuasion, depending on whether the persuasive message was weak or strong when ratings of value relevance and value importance were treated as covariates. In both experiment 1 and experiment 2 these predictions were confirmed.

In both experiments main effects of argument quality were significant suggesting that participants elaborated on the persuasive arguments irrespective of the accessibility level. This suggests that subjects had both the motivation (and ability) to elaborate on the arguments, which may have been due to their personal relevance. No main effects of accessibility were found which suggests that the value manipulation alone was not sufficient to produce attitude change.

However the significant interaction effects of accessibility and quality suggest that increased accessibility did function to increase attitude change indirectly through the increased elaboration of persuasive arguments. The pattern of results suggests that this elaboration was objective as would be predicted by the ELM (Petty & Cacioppo, 1986) in situations of moderate motivation and ability to
elaborate. Despite the recorded attitude change, many subjects still held attitudes rated as unfavourable towards tuition fees. One explanation is that based on their current financial position and knowledge of the financial struggles of university students, many participants would strongly resist paying tuition fees, as was illustrated in the analysis of initial attitude ratings.

The value manipulations in the current study are assumed to increase their awareness that these attitudes conflict with important values such as equality and social justice, in experiment 1 and achievement and success in experiment 2. However, this realisation may have been insufficient to motivate participants to change their attitudes in a value-congruent direction. So, despite the primed values being rated as important in the abstract, other motives may have contributed to the attitudinal judgements.

Specifically, the 'secular' value of wealth may have been pitted against the 'sacred' values of equality and social justice (see Tetlock, 1986). This may have reduced possible attitude change. This theory is supported by the fact that more attitude change occurred in experiment 2, which contained arguments for the value of success, which is of personally relevance and constitutes a more 'secular' value concern. Value conflict may have resulted in ambivalent attitudes and therefore lowered attitude change. Students are presumably motivated to gain the best educational experience; however, most students would be biased against the idea of paying tuition fees.

The effects of the current study have resulted from one of two processes. Firstly the values may have been retrieved and used to respond to attitude items or alternatively, as predicted, activation may have spread from the values to a related attitude directly related to the subsequent persuasion issue. As discussed earlier, although there are both empirical and theoretical grounds for predicting that the manipulation of value accessibility would influence the extent of message elaboration through the activation of related attitudes, no assessment of attitude accessibility following this manipulation was taken and so this presumption remains untested.

The presentation of a value prime is hypothesised to result in that value is made more accessible in an individual’s mind. If the attitude judgement were made shortly after the processing of a value-relevant persuasive message, those factors that are most salient and accessible in memory (i.e. the value) would then determine the attitudinal judgement. Information would be accepted if it is value-consistent and rejected if it were inconsistent with the value (Sherman, 1987). By temporarily heightening value accessibility through priming techniques, a given value may therefore bias subsequent processing in the direction implied by the value. However, this suggests a more peripheral route to persuasion and
the fact that there was a main effect of argument quality suggest that some elaboration of the arguments did in fact occur. Presumably, given the relevant nature of the persuasive message, subjects were motivated to engage in the objective scrutiny of the persuasive arguments as illustrated previously.

Studies 4 and 5: General Discussion

Following changes in methodology introduced to study 5, the manipulation of value accessibility was found to have a significant effect on the amount of elaboration of a semantically related persuasive message. This suggests that both individual differences in the perception of value relevance and importance of a message to a persuasive appeal are significant factors in this process. This finding is in line with other theorists (Ostrom & Brock, 1968; Kristiansen & Zanna, 1988).

The failure to find significant interaction effects in both experiments of study 4 was possibly the result of both a lack of motivation for subjects to elaborate the persuasive message and a failure to take individual perceptions of value relevance and importance into account. In Fabrigar et al's (1998) study (from which both studies 4 and 5 were derived) the elaboration of attitude change was manipulated directly (as opposed to indirectly through the manipulation of a related value) by varying levels of attitude accessibility. Both the prime and the persuasion topic involved attitudes towards vegetarianism and so individual perceptions of the prime's relevance were irrelevant.

The persuasive mechanisms involved in studies 4 and 5 and that of Fabrigar et al (1998) could be re-conceptualised within an attitude function framework, since the value prime may have also manipulated the functional basis of related attitudes. Research suggests that attitudes serve one or more of four functions: the knowledge, ego-defensive, utilitarian and value-expressive function. The value-expressive function is said to exist in attitudes that express central values and the self-concept (Katz, 1960).

A number of moderating variables have been identified which determine the functions served by attitudinal change and expression, namely: (1) properties inherent in the attitude; (2) situational demands and (3) dispositional tendencies of persons holding attitudes (Jamieson and Zanna, 1989). Although an attitude may be inherently linked to a particular attitude function, research has demonstrated that attitude function can be experimentally manipulated by raising the accessibility of a particular basis of an attitude, such as a value (so long as the attitude object has the potential to serve a particular function). In the present study it is assumed that attitudes towards the social issues
explored have the potential to serve a value-expressive function and raising the accessibility of values to which they are likely to be linked in an individual's mind will have activated this value-expressive motivation.

Like attitude accessibility, attitude function is thought to moderate the impact of persuasive messages on attitudes (Katz, 1960; Smith, Bruner & White, 1956). The “matching hypothesis” of persuasion suggests that a persuasive message should elicit more attitude change when the message targets the motivation that underlies the attitudes than when it targets an irrelevant motivation. Therefore if attitudes are value-expressive, priming a value (and therefore raising its accessibility) should elicit the corresponding motivation and this should affect participants’ receptiveness towards different persuasive messages. Specifically, people should be more persuaded by a message that highlights the ability of an attitude to promote a salient value than by a message that highlights a different value or function.

Indeed although Katz (1960) originally suggested that either changing the values themselves or breaking the value-attitude link should change value-expressive attitudes, other researchers have used attitude change techniques similar to those used to manipulate value accessibility. For example, Maio and Olson (1995) exposed participants to different versions of posters that concerned donating money to cancer research. In a condition, which primed the value-expressive function, the poster associated altruism with donating, in a second condition the 'utilitarian' condition was primed in which the utility of cancer research was emphasised. Participants were found to show a stronger relationship between their values and attitudes towards donation in the value-priming condition than they did in a 'utilitarian' condition.

In the same way as the manipulation of value accessibility is supposed to activate related attitudes by a process of spreading activation, attitudes serving a value-expressive function are thought to derive from inter-attitudinal structure (Eagly & Chaiken, 1993). Such attitudes are linked to values in a hierarchy since individuals develop attitudes that are consistent with their values in order to express and act on values that are important to them. Maio & Olson (2000), in their Functional-Structural model, suggest that it is likely that attitude functions influence attitude structure and vice versa. This link between attitude accessibility and function is recognised by Fazio (1989, 2000) who suggests that the most functional attitudes are those that are highly accessible. It is also relevant that both Fabrigar et al (1998) and Petty & Wegener (1998), in discussing how attitude accessibility and functional-matching respectively influence persuasion, suggest that it is by making a connection to the self salient.
In a study using similar methodology to that of Fabrigar et al (1998), Petty & Wegener (1998) tested the hypothesis that message arguments that match the functional basis of an attitude receive greater scrutiny. They manipulated the strength of matching versus mismatching information in messages about new consumer products. They found that information matching arguments received greater scrutiny than mismatches and found an interaction between match and argument strength. The results of Petty & Wegener's study suggest, then, that functional matching might influence persuasion by the same processes, as attitude accessibility. Drawing on the ELM (Petty & Cacioppo, 1986), Petty & Wegener (1998) explain this effect using the same principles as advocated both here and in Fabrigar et al (1998). They suggest that when motivation and ability are neither high nor low, functional matching might prompt people to carefully scrutinise the message. Both increased accessibility and functional matching might, therefore, be seen as equivalent in terms of their persuasive impact.

The extent of attitude change could be said to be determined by individual differences in the perceived relevance of target values to the attitudinal issue or, alternatively, due to the 'functional match' between message arguments and the functional basis of individual's attitudes towards the persuasion topic. However, recent research by Maio & Olson (2000) suggests that all attitude functions can be seen to be value-expressive in the sense that they all serve a different type of "goal-expressive attitude".

The persuasion issues of studies 4 and 5 may have been based on a number of values (or attitude functions) as supported by the significant effect of the perceived relevance of the value primes to the attitude issue in study 5). For example, when asked to indicate their attitude toward the prosecution of war criminals, in study 4, participants might have thought about the importance of social justice due to the value prime. On the other hand, they may have considered whether prosecution would benefit them by protecting them from violent criminals or whether the setting up of war crime tribunals would result in personal debt due to an increase in taxes. Irrespective of priming manipulations, the chronic accessibility of such values (or attitude functions) may have impacted on individual evaluations of the persuasive issues and the resulting attitudes. The primed value alone may not have provided an adequate basis for extensive attitude change. Moreover, it may not be that only the target value was activated but also related values might have become readily available for subsequent attitude evaluations. Sherman (1987) suggests that during priming, a specific stimulus or a 'general category', or 'way of thinking' may become more accessible in memory.
As discussed in chapter 1, section 4, in terms of attitude structure, an attitude may be based on a range of more abstract 'higher-order' attitudes and values and may exist within an associative memory network, in a horizontal as well as a vertical structure (Rajecki, 1990; Eagly & Chaiken, 1998). Even in the event of one value-attitude path being activated, the attitude may still be resistant to change to its associations to other cognitive constructs to which it is anchored since attitudes may have a number of sources.

An individual might be in favour of a particular persuasion issue on the basis of one value (or attitude function) but against the issue on the grounds of another, therefore holding an ambivalent attitude. Whilst Eagly & Kulsea (1997) suggest that the consequence of such ambivalence may be vulnerability to persuasive arguments in the form of value-based persuasive appeals directed at either side of the issue. However, it is equally plausible that conflicting beliefs may also function to restrict attitude change since attitudes held within an extensive inter-attitudinal network are thought to be resistant to change.

Ostrom (1989) suggests that if a persuasive communication focuses on a specific subset of arguments (e.g. the economic, rather than the social consequences of a policy), then the strongest experimental effects should be restricted to that one belief or subset of beliefs. In reference to the current studies, the effects of the value manipulation might appear most clearly on attitudes that tap the specific beliefs presented in the persuasive communication. The results of study 4, for example, may have been more significant if the attitude item that assessed the fairness or justice of war crime prosecution and in study 5, condition 1, the extent to which an increase in tuition fees is 'just', since in both studies, value manipulation primed the value of social justice. Since attitude measurement was restricted to a single question, which was used to tap general evaluations of each attitude issue, any more specific change may have gone undetected. That is, attitude change may have been restricted to the domain of beliefs related to the value prime and may not have generalised to the overall attitudinal evaluation.

As discussed earlier, the current studies and that of Fabrigar et al (1998) predict that accessibility manipulations result in objective central-route processing of persuasive messages. However, a number of studies involving the manipulation of value functions have demonstrated that increased value accessibility could function as a peripheral cue for accepting a persuasive argument. In fact, DeBono (1987, p. 280) states, “by definition, functional theories conceive of attitude change as a peripheral route process”. These conflicting findings could be explained by two factors: (1) levels of motivation and ability to elaborate and (2) the nature of the experimental manipulations.
Firstly, the ELM (Petty & Cacioppo, 1986) suggests that a variable can determine the level of persuasion resulting from a persuasive communication in one of two ways depending on a recipient's level of motivation and ability. Attitude change might result from peripheral, rather than central, processes if the individual had neither sufficient ability nor motivation to elaborate the persuasive message. In such cases, the primed value might act as a peripheral cue for accepting the attitudinal position if it is consistent with the value or rejecting it if it is incompatible with its endorsement.

Secondly, with reference to the type of value manipulations used, the functional theorists have often manipulated the value-expressive function by raising the accessibility of either values in general or alternatively, specific individual value(s). The priming process does not merely raise the accessibility of target values but it also indicates to the subject the attitudinal position required in order to achieve value-attitude consistency. For example in a study by DeBono (1987), in addition to raising the accessibility of the attitude-relevant values, the content of the prime informed subjects that a different attitude better reflected an important underlying value. Similarly, in the study outlined earlier by Maio & Olson, (1995), the value-expressive function, was primed by explicitly associating altruism with donating during the poster presentation. In this sense, the prime functioned in a similar way to the persuasive arguments in the current studies.

Value priming techniques that result in peripheral processing presumably rely on the existing value-attitude link in memory or, by invoking this link in the prime. Since individuals would presumably need to be aware of a direct link between the value and attitudes this would be more likely to the extent that either the link is self-evident, such as a link between the value of honesty and attitudes towards telling lies, or is well-established such as the link between abortion and the sanctity of life. Alternatively, individuals would need to engage in some elaboration of the persuasion topic in the absence of a persuasive argument, a possibility acknowledged by Petty & Cacioppo, (1986). Eagly & Kulsea (1997) suggest that analysis of the values commonly associated with attitudes on environmental issues often have opposite implications for evaluative responding. For example, although the egoistic value may predictably encourage anti-preservation attitudes, when individuals' environmental attitudes arise from their concerns for personal health and safety, this value may foster favourable attitudes towards restricting some environmentally harmful actions.

As the previous discussion illustrates, the persuasion process is complex. Attitude change can depend on a variety of moderating conditions (motivation and ability to elaborate) and variables (value
relevance and importance). A lack of attitude change may not necessarily indicate a failure in the value manipulation to increase the accessibility of the related attitude or moreover, to influence the level of persuasive elaboration. It may mean that the information in the persuasive message was weighed up and considered insufficient to cause change.
CHAPTER 7: CONCLUSIONS & IMPLICATIONS

OVERVIEW

I have proposed in this thesis that a value can be conceptualised as an 'attitude object' and a linked evaluation of that object in memory. The strength of this link represents one form of value accessibility and can be indexed using response latency techniques. A second source of value accessibility is said to result from links between values and related cognitive structures in memory. It is suggested that increasing this accessibility via repeated value expression can in turn, (as predicted by theories of spreading activation) increase the accessibility of semantically related attitudes. Lastly, it is proposed that this process represents one mechanism whereby values may influence the processing of a related persuasive message. The increased accessibility will increase that of those attitudes perceived to be relevant to the value. The extent of this accessibility, in turn will determine the extent of attitude elaboration of the persuasive message.

The results of the present studies provide some support for these ideas. In this chapter, the major findings associated with the predictions laid out in the introduction are firstly reassessed (section 1), as well as some reasons for apparent discrepancies in the findings. Next a number of theoretical questions raised by the current research are discussed, along with their implications for future research (section 2). The limitations of this research are then examined (section 3) and some conclusions are drawn (section 4).

SECTION 1: CONCLUSIONS ABOUT RESEARCH QUESTIONS AND HYPOTHESES

Based on the broad lines of reasoning outlined in chapter 1, a number of questions were posed and addressed in the subsequent chapters. These questions can be answered by reference to the experimental findings, which emerged in the research.

1. Is response latency a reliable and valid measure of value strength?

In studies 1 and 2 it was predicted that the speed at which individuals respond to inquiries about value importance (as operationalised by measures of response latency) would be positively correlated with
subsequent ratings of value importance during this latency task and on subsequent importance ratings on the SVI (Schwartz, 199b).

The experimental findings partially confirmed this prediction. In both studies, measures of value accessibility were positively correlated across testing sessions. The correlations suggest moderate reliability. However, evidence for the construct validity of response latency as a measure of value strength was less clear. Although no correlation between response latency and value strength, as measured by the SVI, was found, a relationship was found between response latency and respondents' ratings of value importance during this latency assessment. Despite attempts to control respondents' concentration and task comprehension (through instructions and practice trials), participants' attention may have lapsed at some points during the experiment, particularly in study 2 which involved responding to 112 value items without a break. Some participants may have experienced boredom and therefore responded in a lackadaisical manner. However, there are several other explanations for the weak correlation between the two measures, which suggest that low correlations are not necessarily indicative of the weakness of response latency as a measure of value strength.

Firstly, insignificant correlations between response valences from the latency tasks and SVI responses may illustrate instability in individuals' value ratings. Given this fact, it is not surprising that response latency and SVI responses were similarly weak. Inconsistent responding could result from inaccuracies in survey measurement due to pressures of social desirability. Participants' may have responded according to what they believed "ought" to be important in their lives and this is more likely to be a factor affecting SVI completion than latency valences since no time constraint was imposed on individuals and more cognitive elaboration was therefore possible.

Secondly, as discussed in chapter 1, section 2 there has been much debate concerning the dimensional nature of attitude strength and, due to the structural conceptualisation of values adopted in this thesis, value strength. Research has examined whether different dimensions (e.g. importance, accessibility) can be considered representative of one underlying strength construct (e.g. Raden, 1985; Petty & Krosnick, 1998). The lack of correlation between these two measures is possibly the result of divergent properties of the two dimensions.

However, it must be noted that these two explanations do not account for the findings of Gilchrist (1996), of a significant positive relationship between the importance ascribed to values and the speed at which respondents are able to indicate the perceived importance of these values. Also, if values are
accepted as object-evaluation associations then it follows that Fazio's findings of the construct validity of response latency measurement should also apply as equally to values as to other memorial associations (c.f. Fazio, 1995) including values.

An implication for this current research is that the construct validity of response latency measurement could be tested against an alternative measure of value strength. In order to control for the effects of differences between properties of value strength, the validity of response latency as a measure of value accessibility could be assessed. In addition to response latency techniques, value accessibility could be measured by self-report (e.g. "how easily/quickly does your evaluation of a particular value come to mind?") or using an indirect measure, asking individuals how often they think or talk about the value. It is assumed that the more accessible the value is, the more the individual will report thinking about it.

An ‘operative measure’ of accessibility, such as, a progressive demasking procedure like that employed by Grainger & Segui (1990) could also be used as an alternative measure of value accessibility. This procedure, involves “masking” pixels on the computer screen, which are randomly reconfigured until the name of the value, which initially is unrecognisable, is recognised by the subject. The response latency between the appearance of the first pixel, until recognition would act as an index of accessibility. In brief, despite the initial weak evidence for the construct validity of response latency as a measure of strength, it is proposed that this idea should not be abandoned and further work is needed.

What is often considered to be of interest in terms of the measurement of value strength is not the rating of value strength per se but the consequences of this strength. In order to determine response latency’s potential as a measure of value strength, future research could assess the extent to which response latency measures can predict such spin-offs such as the activation of related constructs in memory and attitude change. This latter issue is addressed in the following studies.

2. Does the activation of a value influence the accessibility of semantically related attitudes?

It was predicted that activating a value in an individual’s mind using priming techniques, would raise the accessibility of semantically related attitudes. This would be visible in the differentiation of mean response times to individuals’ evaluative judgements of attitudes following a related value compared to those following an unrelated value prime. The results of study 3 confirmed this hypothesis. Theoretically, these findings are supportive of models of associative networks in memory and are
compatible with the idea that the activation of a 'higher-level' attitude can activate a semantically related "lower-level" attitude through a process of spreading activation (e.g. Eagly & Chaiken, 1993).

Future research could examine links between values and other cognitive constructs in memory. For example, it is possible that the activation of related constructs through priming would be strongest for other values. Schwartz (1996) suggests that values exist in a value structure and are distinguished by the type of motivational goal they express. Each value type is defined in terms of its central goal, and specific single values that primarily represent it. The model specifies a set of dynamic relationships between ten different motivational types. These types are located in a circular structure of value systems with types located in opposing directions postulated to be in conflict and those whose values may be attained simultaneously in a compatible manner are located near to each other. It is probable that response latencies should be quicker when values are presented in their motivational domains.

The evidence discussed earlier by Katz and Hass (1988), suggests that the causal relationship between values and attitudes may be bi-directional. Priming social values influenced the expression of racial attitudes and likewise, priming racial attitudes influenced the expression of social values. These findings are consistent with Rokeach's (1973) assertion that changes in any element of the self-concept-value-attitude-belief hierarchy would result in change in the other elements. However, Rokeach suggested that the influence of values or attitudes would be stronger than the influence of attitudes or values. A future study could examine this relationship using the same methodology employed in study 3 to determine whether the presentation of an attitude prime would decrease response times to semantically related values. If the interactions were indeed two-way, then the activation of an attitude would be expected to activate any values from which the attitude is derived or related with the result of decreasing response latencies to enquiries about the strength of these values.

This study concerned semantic links between values and attitudes. The evaluative links between values and attitudes could also be examined using the same methodology. In the study discussed earlier by Tourangeau, Rasinski & D'Andrade, (1991), the evaluative 'distance' between successive belief items on individuals' ratings on the pro-con dimension, was found to be significantly correlated with reaction times for questions on attitudes towards welfare. This idea of evaluative distance could be examined in terms of links between values and attitudes. It is possible that, holding semantic similarity constant, values and attitudes that are matched in terms of both valence and the extremity have stronger links within the associative network than those for whom reported valence and extremity are more disparate.
One connotation of the conceptualisation of values introduced in this thesis, concerns its implication for persuasion, specifically, the degree to which values function like attitudes in the persuasion process. Confirmation of this fact would provide evidence for the primary thesis that like attitudes, values can be considered object-evaluation links in memory. Studies 4 and 5 explored a variation of the ideas put forward by Fabrigar et al (1998), namely the impact of value (as opposed to attitude) accessibility on the elaboration of persuasive appeals. Value accessibility was manipulated by varying the number of times participants rated target values. It was hypothesised that increased value accessibility would be associated with either more or less persuasion, depending on whether the persuasive message was weak or strong.

The results of study 4 found no reliable evidence for this effect. However, although the interactions were small and not statistically reliable the pattern of results was in line with the theoretical predictions. Furthermore, after a number of methodological modifications were made, the results of study 5 indicated that when individual ratings of value relevance and value importance were taken into consideration, as predicted, value accessibility did act to determine the extent of message elaboration. Specifically, when accessibility was high, there was more differentiation in the effects of argument quality, than when accessibility was low.

The significance of value relevance supports one possible explanation for the unexpected findings in study 4. If, as was suggested, the primed values were not perceived as directly relevant to the persuasion issues, then it is not surprising that the manipulation of accessibility did not predict the extent of message elaboration. It is likely that people interpret the effects of information about attitudes in the context of any number of values, which may or may not include the target value and may differ from person to person. To the extent that a particular value is made accessible and is perceived as relevant, there is an increased chance that, for any individual, the issue will be interpreted and analysed in terms of this value.

Presumably, a direct interaction between accessibility and argument quality would occur when values and attitudes are directly and intuitively linked in an individual’s mind (that are, therefore, by nature, more relevant). Rajecki (1990) implies that ‘higher-level’ attitudes are often linked to lower level attitudes in a chain. Depending on an attitude’s position in the chain, it may be more or less closely linked to the target ‘higher-order’ attitude. Some values may have more obvious implications for
attitudinal responses in the same way that some attitudes may have more direct links to behaviour. For example, it has been shown that attitudes towards recycling have more direct implications for recycling behaviour than do attitudes towards the environment. In a similar way, the value of honesty would have more direct implications for attitudes towards behaving honestly than to attitudes towards tax evasion in which honesty is one of a number of possible contributing factors and possibly regarded as an indirect component. It is worth noting that value accessibility would, in natural persuasion contexts, possibly be related to value relevance in that it is only those values that are seen as relevant to a particular situation which would automatically come to mind and influence subsequent decisions.

The significance of value importance implies that making a value more accessible will not cause most people to shift their attitudes in the direction of the value. Rather it suggests that if the target value is more important to the individual than the competing values and perceived as relevant to the issue, the attitudes tended to be consistent with that value, whereas if it is less important, or relevant the attitude will probably reflect other value priorities. An individual will not interpret an attitude in light of an activated value if they do not regard the value as relevant.

In study 5, priming social justice did not increase the likelihood that people endorsed the social justice position. Rather, it increased the likelihood that the position endorsed was consistent with the importance of this value. If social justice was important, individuals tended to endorse the related position i.e. favourable attitudes towards tuition fees. Only if social justice was unimportant, did people endorse the social justice position.

This discussion illustrates the complexity of attitude change processes, which can be seen to depend on a variety of moderating conditions. Future work could consider further the psychological conditions that must be satisfied in order to accurately translate general values into specific attitudes. This research found support for three possible requirements, namely, value accessibility, relevance and importance.

SECTION 2: QUESTIONS RAISED

There are three interrelated questions, which were raised by the current research. The first concerns the relationship between the dimensions of value importance and value accessibility. The second is a more general issue concerning the structural nature of values and their current status within the social
psychological literature. The third question concerns the influence of context on the dimensions of value importance and value accessibility. Each of these issues will be addressed in turn.

1. What is the relationship between value importance and value accessibility?

In studies 1 and 2 it was predicted that value importance and value accessibility would be positively correlated. This relationship was expected since value accessibility might be determined, at least partially, by value importance (or vice versa). The frequency of activation of a construct is said to determine its chronic accessibility (Higgins & King, 1981) and it was predicted that an important determinant of the frequency with which a value is activated is its importance i.e. important values are likely to be activated more frequently in an individual’s mind than unimportant values.

There is both theoretical and empirical support for such a prediction within the attitudinal literature. Krosnick (1989) hypothesised that important attitudes may be more accessible in memory and may therefore come to mind more frequently in the course of social perception. On the other hand, people may use their ease of retrieving an attitude from memory as a basis for inferring its importance. Fabrigar et al (1998) proposed that attitudes that are highly accessible might come to mind spontaneously and therefore imply to the individual that they have hedonic consequences. Bassili (1996) also suggested that attitude accessibility ( indexed by response latency) could sometimes mediate meta-attitudinal judgments of attitude importance.

The relationship between attitude importance and accessibility has been confirmed by a number of empirical studies. For example, Roese & Olson, (1994) manipulated attitude accessibility by varying the frequency of attitude expression. Repeated expression was found to result in both reduced response latencies (i.e. enhanced attitude accessibility) and increased perceived attitude importance. The effect of repeated expression on latencies remained reliable when importance ratings were controlled, but the effect of repeated expression on importance disappeared when latencies were controlled. However, Powell & Fazio (1984) reported that, when repeated expression of attitudes involves judgements of attitude valence, they appear to affect only attitude accessibility but not actual attitude ratings or their extremity.

If values are conceptualised as a type of abstract attitude objects then it follows that, in the same way as attitude importance and accessibility are related, value accessibility would be related to value importance. However, although these concepts are related, they may not be synonymous. There are
possibly factors other than value importance that would lead people to think in terms of particular 
values and therefore increase their accessibility. Values may be activated in memory but not typically 
judged as important as guiding principles. In addition, not all values, which are considered important, 
may be chronically accessible.

As discussed in chapter 1, individuals do not live in one domain and important values within the family 
or at work may differ from those thought to be generally important to the individual. At work an 
individual might be required to abide by a code of professional standards that emphasise values that 
they might not ordinarily rate as important as guiding principles. It is also possible that some people 
regularly behave in ways that conflict with their values such as the values of punctuality or equality. 
They may also justify their behaviour by appealing to values that are consistent with their behaviour, 
but are not actually perceived as important in their value systems (e.g. Kristiansen & Zanna, 1988). In 
such cases, individuals could conceivably spend substantial amounts of time thinking in terms of these 
unimportant values, which may, as a result, become chronically accessible. Similarly, the experimental 
manipulation of accessibility, used in studies 4 and 5, may have temporarily raised the accessibility of 
the values of social justice and success, but the importance of these values, as guiding principles in the 
participants' lives might not have been increased.

Likewise, it is also possible that unimportant values are activated automatically if these values are 
linked to related attitudes that are activated frequently. For example, proponents of abortion may be 
aware of both sides of the abortion debate (e.g. Pratkanis, 1989) based on the values of individual 
freedom and sanctity of life, and both values may be frequently activated in their minds although 
individuals are likely to ascribe importance to only one of these values or to give another example, 
individuals in the armed forces may normally rate the value of the sanctity of life as extremely 
important, in situations of warfare. However, the value of national security may become more 
accessible, and their behaviour may reflect this.

The research reviewed brings into question the purity of the value accessibility manipulations used in 
studies 4 and 5. The results of study 5 provided evidence that when a value is primed this leads to the 
increased elaboration of a relevant persuasive message. However, no measure was taken of value 
accessibility. It is plausible then, that these manipulations served to increase value importance rather 
than value accessibility. Alternatively value accessibility may have been increased as predicted and this 
may have simultaneously increased individuals' perceptions of value importance. Alternative 
manipulations of value accessibility may act to increase value accessibility in such a way that the
salience of value importance is not altered since they do not involve rating the values on evaluative scales.

For example, some theorists have used subliminal priming manipulations to increase construct accessibility. Because neither involve expressions of value importance, they may be more likely to represent relatively "pure" accessibility effects. The use of such techniques in future research, would demonstrate whether increases in the accessibility of values are necessarily associated with increases in value importance.

To date, value research has focused on the measurement of value importance. This thesis has examined another aspect of value strength i.e. accessibility. If values are analogous to attitudes in terms of their structure, this suggests that the findings of other attitudinal dimensions may be applicable to values. A number of other properties of values have already been examined, namely, ambivalence (the extent to which one's reactions to a value object are evaluatively mixed) and confidence (the certainty with which an individual holds a value) e.g. Tetlock, (1986). It is possible that accessibility is correlated more strongly with these other aspects of value strength. For example, it is recognised likely it would take longer to report the importance of those values about which an individual has conflicting feelings. Future empirical work is needed to examine this possibility.

2. Are values synonymous with attitudes in terms of structure?

In the psychological literature, value structure has been conceptualised in a number of different ways (see chapter 1, section 1). In this thesis, values are taken to consist of an association between an object and its evaluation in memory (cf. Fazio, 1986). Although the present studies do not involve a direct investigation of value structure, the results do provide some insight into the plausibility of this value conceptualisation.

The validity of response latency as a measure of value strength would suggest that, as with attitudes, values consist of object-evaluation associations in an individual’s mind. As discussed, analysis of the results of study 2 found moderate test-retest reliability and partial support for the construct validity of response latency as a measure of value strength. There was a significant relationship between response latency and respondents’ ratings of value importance during the latency assessments. It is suggested that further work is necessary in order to determine if value accessibility, as measured by response latency techniques, accesses the same aspect of value strength as more traditional value
strength measures. However, in terms of evidence for the structural conceptualisation of individual attitudes, the present research does provide some promising evidence that values might be considered object-evaluation links in an individual’s cognitive system, comparable to the structure of attitudes proposed by Fazio et al (1982).

In terms of external value structure, studies 3 and 5 are consistent with previous theory and research suggesting the existence of hierarchical links between values and attitudes in an individual’s cognitive system (e.g. Rokeach, 1967; Katz & Hass, 1988). Study 3 found evidence that the activation of important values leads to the raised accessibility of semantically related attitudes as indicated by shorter response times to judgements regarding these attitudes. Study 5 found evidence, which suggests that increasing value accessibility through repeated value expression might lead to the activation (and increased accessibility) of semantically related attitudes, which in turn, as Fabrigar et al (1998) discovered, leads to greater elaboration of related persuasive appeals.

The internal and external aspects of value structure can be seen to relate to two types of spreading activation, firstly, between elements of an individual value i.e. between a value object and an evaluation of that object and secondly, between values and other cognitive structures, such as attitudes. This conceptualisation mirrors that of Eagly & Chaiken (1998) in their discussion of intra- and inter-attitudinal strength and of Feather (1990) who suggests that value strength depends on both their association with strong affective reactions along an evaluative continuum and secondly, the centrality of their position within the cognitive affective belief system i.e. the number and strength of links to other cognitive structures.

If value accessibility is defined as the extent to which a value is readily available in memory, then it could be divided into two types corresponding to the two types of value strength: (a) internal accessibility — dependent on the strength of the association between the value object and its evaluation in memory, and (b) external accessibility — the number and strength of links between a particular value and other constructs. In this sense, Fazio’s (1986) definition of (attitude) accessibility could be is seen as too narrow since it applies only to one source of accessibility i.e. internal structure.

Despite the structural similarities between the value and attitude concepts, it is proposed that the concept of values is worth pursuing independently to that of attitudes, due to the distinctive nature of values. Values are more than abstract attitudes; there are a number of other specific qualities which
values are routinely held to possess. They are limited in number, refer to abstract goals and may also lack a cognitive basis unlike attitudes (cf. Maio & Olson, 1998).

3. What are the contextual issues in value accessibility and the value-attitude relationship?

Value strength has typically been conceptualised in terms of the importance of particular values. More recently, this conceptualisation has been expanded to include the extent to which these values are thought to be important in their influence on thoughts about particular issues (e.g. Seligman & Katz, 1996, see chapter 1, section 1). The relative importance of values has been shown to change depending on the context in which their importance is rated. As a result, the importance to an individual of a particular value as a general guiding principle in their life may not predict an attitude toward an issue as well as the importance of that value in the way the individual thinks about the specific issue. That is, an individual may interpret the importance of a particular value within the constraints of a particular attitudinal or behavioural context.

It is plausible that, in the same way that value importance is context sensitive, so too is value accessibility. On the one hand, chronic levels of value accessibility might be independent of any particular attitudinal issue. For example, general value accessibility might be reflected in the ease with which an individual can decide how important a value is as a guiding principle in their lives. On the other hand, it may be the case that the immediate situation (e.g. the presentation of an attitude issue) will cause a particular value(s) to be accessed. For example, thinking about deforestation may cause an individual to think about the value protection of the environment. Nonetheless, it is not necessarily the case that those values that are generally more accessible (i.e. those whose chronic accessibility is high) will be highly accessible when thinking about a particular issue. In fact it is conceivable that an individual’s perception of the immediate situation could influence the accessibility of values independent of their chronic level of accessibility. In other words, specific values can be primed in certain situations resulting in situational influences so that temporary levels of accessibility become more influential over and above chronic levels of accessibility.

This situation can be regarded as specific to values rather than to more general attitudes. Attitudes typically refer to evaluations of specific attitude objects to which they relate. This suggests that in the same way as value importance has been shown to be more predictive when measured in a specific context, temporary accessibility i.e. the accessibility of a value at any particular moment in time, is likely to influence subsequent attitudes or behaviour irrespective of levels of chronic accessibility.
As discussed in chapter 1, Seligman & Katz (1996) suggest that individuals need both a stable value system but also to be able to respond flexibly according to the situation. Which values are consulted in a particular situation is likely to depend not only on value importance, but also on value relevance. It is proposed that this relevance may be determined by the temporary accessibility of particular values in a specific situation. Only values, which are relevant, will be activated and therefore made more accessible. This accessibility may result in those particular values being considered important in that particular context. Although relative rankings of value importance remain stable (Rokeach, 1973), value relevance (and therefore accessibility) is variable at any one point in time. Which values are relevant are 'highlighted' and therefore become more accessible for any cognitive processing which is subsequently required.

When making decisions, or, in times of extreme value conflict, individuals may use the chronic accessibility of values or value importance as a guide. However, on a more regular basis, it is the temporary accessibility of an individual's values, determined by the context, which is likely to guide attitudes and subsequent behaviour. For example, the priming process used in studies 4 and 5 would increase such temporary accessibility. An implication for the present thesis is that stronger effects may have been obtained if individuals had rated the values in terms of their importance in the light of the persuasion issue. This would have served the same function as the value relevance check since important values would be those perceived to be relevant in that particular context.

For this reason, it is possible that the value accessibility manipulation used in studies 4 and 5 would have had more impact on levels of attitude change than would the chronic levels of accessibility typically associated with those values. Fabrigar et al (1998) found comparable results when attitude accessibility was either manipulated or measured using response latency techniques. Perhaps future studies could also measure value accessibility using response latency techniques in order to determine whether, as Fabrigar et al found was the case with attitudes, chronic as well as temporary levels of (value) accessibility determined the elaboration of subsequent related persuasive messages.

It is also possible that measuring value importance within a particular context might decrease problems associated with inconsistent ratings across value measures in studies 1 and 2. Some degree of instability may have resulted from the intrinsically abstract nature of values. Individuals may consider the importance of values within different contexts and therefore come to different conclusions regarding their importance, particularly following any elaboration that may have occurred between
completion of the two value measures. This process would also result in decreased correlations between response latencies and later survey measures of value importance. If value importance was assessed within the context of a particular attitude issue, such inconsistent responding might be avoided.

SECTION 3: LIMITATIONS

Reflection on the methodology used in the current studies revealed a number of issues that are cause for caution when interpreting the experimental results. Firstly, following Fabrigar et al (1998), it was assumed that participant levels of motivation and ability in studies 3 and 4 were moderate. If the postulates of the ELM (Petty & Cacioppo, 1986) are accepted, then the findings of central route processing in study 5 are compatible with such an assumption. However, in neither study were levels of motivation or ability assessed. This is particularly problematic since the ELM has been criticised for being unfalsifiable (Fiske & Taylor, 1991) since some variables have been found to have multiple effects (i.e. encouraging either central or peripheral processing, and biased or objective processing depending on contextual factors). Such an assumption of moderate ability/motivation may, therefore, mask other potentially confounding factors. In order to validate these suppositions, future studies, should, therefore, introduce a measure of these variables.

Secondly, the difficulties associated with response latency measurement are well documented. Response latency could be criticised for being too dependent on having perfect experimental conditions with highly motivated subjects. According to Luce (1986, p.51), "Much of the art of running a good reaction-time experiment centres on gaining the cooperation of subjects in maintaining a high level of attention when actually running the experiment". Although in the studies reported, every effort was made it cannot be certain that these conditions were met.

Furthermore, it was assumed that the presentation of value primes and corresponding attitudes in study 3 could be treated as separate trials with no carry-over effects between each value-attitude pairing. A three second interval was left between the presentation of an attitude item and the presentation of the next value prime. Since it is established that the effects of primes are short-lived (Fiske & Taylor, 1991), it was assumed that this time lag would prevent the value primes altering response times to other attitude items. However, to take account of this possibility, response times on future studies could be adjusted for individuals' general baseline speed of responding by using filler trials. Although there was no reason to suspect that the priming manipulation had the potential to
affect the decision criteria used by respondents, baseline latencies could be compared across experimental conditions. Significant differences would suggest that the manipulation of prime-attitude relevance affected participant decision criteria and may therefore have determined response latencies (cf. Fazio, 1995).

In general, the problem with response latency measures is that, as Fazio (1995) remarks, they are "unquestionably noisy" (p.95) and "extraordinarily messy" (p.75). It is stressed however, that, if used appropriately and interpreted carefully, they can be very informative. 'Noise' is thought to result from a number of sources. On a particular latency trial, individuals' typically respond at different rates since their attention may wander or they might be confused about which response best represents their evaluation. As a result, whilst some subjects may reflect and deliberate about a response, leading to longer latencies, others may be more apathetic in their responses, resulting in shorter latencies. Keeping subjects' attention and co-operation during response latency tasks is therefore essential (Fazio, 1995). Boredom and motivation levels need to be controlled.

As directed by Fazio (1995), the instructions given to subjects can assist in this task. In the current studies, subjects were asked to respond as accurately and as quickly as possible. They are also given practice trials in order to familiarise them with the task requirements and develop their reaction times to an acceptable baseline level, thereby increasing the chance that they would remain constant across target trials.

In general, the faster individuals respond during a latency task, the more likely it is that they will make a mistake (Fazio, 1995). In the current thesis, it was found that subjects made a large number of errors, responding inconsistently between testing sessions (a mean of 12.02 in study 1 with a dichotic response format and a mean of 14.05 in study 2 when the number of response options was increased). This may have resulted from the fact that, despite instructions to be as accurate as possible, they had focused on responding quickly and so their decisions concerning the appropriateness of their responses had become sloppy. The ideal is that subjects commit very few errors while responding as quickly as possible.

With the exception of the 5-response option condition in study 2, there was no relationship between response speed and the number of errors made. This could reflect the fact that subjects were unable to make such judgements and perhaps do not have, as Bassili's (1996) research suggests (see chapter 1), readily available summaries of the extent of their endorsement of particular values. In
everyday life, individuals are not typically required to make an assessment of the importance of particular values, except in situations involving explicit value trade-offs. Furthermore, in study 2, where subjects had to decide, not only whether a value was personally 'important' or 'not important', but which particular scale position (e.g. 6, 7 or 8) was most representative of the exact level of value importance. This task may have proved too difficult in the absence of any particular context, leading to ambiguity and inconsistent responses.

SECTION 4: CONCLUSION

Despite the accepted importance of the role played by values, empirical attention has been limited compared to their potential importance (Homer & Kahle, 1988). However, it is proposed that in the current thesis extends the body of knowledge within the field of value research through an investigation of one dimension of value strength — value accessibility. Firstly, the research applies response latency techniques to the measurement of value strength, which, to the author’s knowledge, has not previously been done except in an unpublished dissertation by Gilchrist (1996). Future research is needed to provide construct validity for response latency measurement using values.

However, despite the ambiguous findings, the idea of response latency is appealing as "latency measures appear to provide reliable and valid indications of associative strength in memory (Fazio, 1995, p.94). In addition, Bassili (1996) has discussed the advantages of such operative measures with regard to attitudes, which can presumably be extrapolated to its use in the measurement of individual values. Response latency has been used extensively within attitudinal research, using not only computer-generated text although this is the most straight-forward and popular but also in the context of computer assisted telephone interviewing (CATI) technology. Furthermore, the cognitive representation of constructs in memory is difficult to investigate using other techniques.

The fact that the extent of message elaboration and attitude change was predicted by the differential accessibility of values suggests that it is worth exploring properties of values other than importance, and investigating their role in the value-attitude relationship. It is unlikely that attitudes are merely an expression of values. The current research provides support for the role of a number of other variables. It is proposed that although value accessibility is important, values may only influence attitudes to the extent that they are perceived as relevant and important. However, in natural settings, only relevant values would likely come to mind in any particular situation irrespective of their levels of accessibility.
The finding that value accessibility has an effect on the extent of message elaboration suggests a number of consequences for the nature of attitude change, in particular, their temporal persistence, resistance and ability to predict behaviour. Petty & Cacioppo (1986) conclude that attitude changes that result from high levels of issue-relevant cognitive activity on dimensions central to the attitude object are stronger than changes that are accompanied by little issue-relevant thought. A question for future research concerns the relative role of accessibility or importance in the prediction of attitudes. There are circumstances under which each would be more likely to provide accurate prediction of attitude change.

The findings of the present thesis are compatible with the definition of values proposed by Feather (1990), although he is not explicit concerning the internal structure of individual values. He suggested that value importance involves both the relation of values to affect and the centrality of values, as indicated by their hierarchical location in the total system of beliefs, attitudes and values. These two relationships could be seen as analogous to both internal accessibility (as examined in studies 1 and 2) and external accessibility (as confirmed by study 3).

In addition, Feather suggests that other aspects of importance relate to current needs of the individual and to the immediate situation. This suggestion is consistent with the findings of study 5 concerning the significance of value relevance in the value-attitude relationship. He states that, due to this broad definition of the meaning of value importance, research is needed, which investigates the affective basis of values more directly. It is proposed that questionnaire measures may be inadequate since researchers may become “trapped in some kind of semantic circle, of exploring the meaning of relations between words and not going beyond the semantic space”. The current thesis, by introducing response latency as a measure of value strength, has gone some way to fulfilling these goals.
A COMFORTABLE LIFE
A SENSE OF ACCOMPLISHMENT
SALVATION
COURAGEOUS
IMAGINATIVE
CHEERFUL
SELF-CONTROLLED
INTELLECTUAL.
A COMFORTABLE LIFE
(a prosperous life)

A SENSE OF ACCOMPLISHMENT
(lasting contribution)

SALVATION
(saved, eternal life)

COURAGEOUS
(daring, creative)

IMAGINATIVE
(restrained, self-disciplined)

CHEERFUL
(lighthearted, joyful)

SELF-CONTROLLED
(restrained, self-disciplined)

INTELLECTUAL
(intelligent, reflective)
"EQUALITY"
"INNER HARMONY"
"SOCIAL POWER"
"PLEASURE"
"FREEDOM"
"SENSE OF BELONGING"
"SOCIAL ORDER"
"AN EXCITING LIFE"
"MEANING IN LIFE"
"POLITENESS"
"WEALTH"
"NATIONAL SECURITY"
"SELF RESPECT"
"RECIPIROATION OF FAVOURS"
"CREATIVITY"
"A WORLD AT PEACE"
"RESPECT FOR TRADITION"
"MATURE LOVE"
"SELF-DISCIPLINE"
"PRIVACY"
"FAMILY SECURITY"
"SOCIAL RECOGNITION"
"UNITY WITH NATURE"
"A VARIED LIFE"
"WISDOM"
"AUTHORITY"
"TRUE FRIENDSHIP"
"A WORLD OF BEAUTY"
"SOCIAL JUSTICE"
"INDEPENDENT"
"MATURE LOVE"
"LOYAL"
"AMBITIOUS"
"BROADMINDED"
"HUMBLE"
"DARING"
"PROTECTING THE ENVIRONMENT"
"INFLUENTIAL"
"HONOURING OF PARENTS"
"CHOOSING OWN GOALS"
"HEALTHY"
"CAPABLE"
"ACCEPTING MY PORTION IN LIFE"
"HONEST"
"PRESERVING MY PUBLIC IMAGE"
"OBEYING"
"INTELLIGENT"
"HELPFUL"
"ENJOYING LIFE"
"RESPONSIBLE"
"CURIOUS"
"FORGIVING"
"SUCCESSFUL"
"CLEAN"
"SELF-INDULGENT"
"DETACHMENT"
"BROADMINDED"
"HUMBLE"
"DARING"
EQUALITY
(equal opportunity for all)

INNER HARMONY
(at peace with myself)

SOCIAL POWER
(control over others)

PLEASURE
(gratification of desire)

FREEDOM
(freedom of action and thought)

SENSE OF BELONGING
(feeling that others care about me)

SOCIAL ORDER
(stability of society)

AN EXCITING LIFE
(stimulating experience)

MEANING IN LIFE
(seeing purpose in life)

POLITENESS
(courtesy, good manners)

WEALTH
(material possessions, money)

NATIONAL SECURITY
(protecting the nation from enemies)

SELF RESPECT
(belief in one's own worth)

RECIPIRATION OF FAVOURS
(avoidance of indebtedness)

CREATIVITY
(uniqueness, imagination)

A WORLD AT PEACE
(free of war and conflict)

RESPECT FOR TRADITION
(preserving time-honoured customs)

MATURE LOVE
(deep emotional and spiritual intimacy)

SELF-DISCIPLINE
(self-restraint, resistance to temptation)

PRIVACY
(the right to have a private sphere)
FAMILY SECURITY
(safety for loved ones)

SOCIAL RECOGNITION
(respect, approval by others)

UNITY WITH NATURE
(fitting in to nature)

A VARIED LIFE
(filled with challenge, novelty and change)

WISDOM
(a mature understanding of life)

AUTHORITY
(the right to lead or command)

TRUE FRIENDSHIP
(close, supportive friends)

A WORLD OF BEAUTY
(beauty of nature and the arts)

SOCIAL JUSTICE
(correcting injustice, care for the weak)

INDEPENDENT
(self-reliant, self-sufficient)

MODERATE
(avoiding extremes of feeling and action)

LOYAL
(faithful to my friends, group)

AMBITIOUS
(aspiring, hard-working)

BROADMINDED
(tolerant of different ideas and beliefs)

HUMBLE
(modest, self-effacing)

DARING
(seeking adventure, risk)

PROTECTING THE ENVIRONMENT
(Preserving Nature)

INFLUENTIAL
(Having An Impact On People And Events)

HONOURING OF PARENTS
(Showing Respect)

CHOOSING OWN GOALS
(Selecting Own Purpose)
HEALTHY
(Not Being Sick, Physically Or Mentally)

CAPABLE
(Competent, Effective, Efficient)

ACCEPTING MY PORTION IN LIFE
(submitting to circumstances)

HONEST
(genuine, sincere)

PRESERVING MY PUBLIC IMAGE
(saving face)

OBEIDENT
(dutiful, meeting obligations)

INTELLIGENT
(logical thinking)

HELPFUL
(working for the welfare of others)

ENJOYING LIFE
(enjoying food, leisure, sex, etc.)

RESPONSIBLE
(dependable, reliable)

RESPONSIBLE
(dependable, reliable)

CURIOUS
(interested in everything, exploring)

FORGIVING
(willing to pardon others)

SUCCESSFUL
(achieving goals)

CLEAN
(neat and tidy)

SELF-INDULGENT
(doing pleasant things)

DETACHMENT
(from worldly concerns)
INSTRUCTIONS

This is a simple value measurement task. There are no right or wrong answers.

- Rest your hands comfortably above the response keys

- A series of words or phrases will appear one at a time in the middle of the computer screen.

- Your task is to press one of the following two keys to indicate your judgment of the target word as a GUIDING PRINCIPLE IN YOUR LIFE.
  
  - Not important  + Important

- Try to:
  1. Be accurate and not in such a hurry that you regret a decision.
  2. Respond as quickly as possible
  3. Concentrate until the end of the task.

Thank You
INSTRUCTIONS

This is a simple word association task. There are no right or wrong answers.

- Rest your hands comfortably above the response keys
- A series of words or phrases will appear one at a time in the middle of the computer screen. Under each word will be a description of the word in brackets.
- Your task is to press one of the following two keys to indicate your judgment of the target word as a GUIDING PRINCIPLE IN YOUR LIFE.

  - Not important
  - Important

- Try to:
  4. Be accurate and not in such a hurry that you regret a decision.
  5. Respond as quickly as possible
  6. Concentrate until the end of the task.

Thank You
A COMFORTABLE LIFE
(a prosperous life)

A SENSE OF ACCOMPLISHMENT
(last ing contribution)

SALVATION
(saved, eternal life)

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*(self-reliant, self-sufficient)*
"PROTECTING THE ENVIRONMENT"
*(preserving nature)*
"FAMILY SECURITY"
*(safety for loved ones)*
"TRUE FRIENDSHIP"
*(close, supportive friends)*
"INNER HARMONY"
*(at peace with myself)*
"Pleasure"
*(gratification of desire)*
"SOCIAL POWER"
*(control over others)*
"Pleasure"
*(gratification of desire)*
"FREEDOM"
*(freedom of action and thought)*
"MEANING IN LIFE"
*(seeing meaning in life)*
"SENSE OF BELONGING"
*(feeling that others care about me)*
"SOCIAL ORDER"
*(stability of society)*
"SOCIAL RECOGNITION"
*(respect, approval by others)*
"AN EXCITING LIFE"
*(stimulating experience)*
"MATURE LOVE"
*(deep emotional and spiritual intimacy)*
"BROADMINDED"
*(tolerant of different ideas and beliefs)*
"MEANING IN LIFE"
*(seeing purpose in life)*
"POLITENESS"
*(courtesy, good manners)*
"WEALTH"
*(material possessions, money)*
"NATIONAL SECURITY"
*(protecting the nation from enemies)*
"SELF RESPECT"
*(belief in one's own worth)*
"RECIPROCATION OF FAVOURS"
*(avoidance of indebtedness)*
"CREATIVITY"
*(uniqueness, imagination)*
"LOYAL"
*(faithful to my friends, group)*
"A WORLD AT PEACE"
*(free of war and conflict)*
"RESPECT FOR TRADITION"
*(preserving time-honoured traditions)*
"MATU RE LOVE"
"(deep emotional and spiritual intimacy)"
"SELF-DISCIPLINE"
"(self-restraint, resistance to temptation)"
"HUMBLE"
"(modest, self-effacing)"
"PRIVACY"
"(the right to have a private sphere)"
"FAMILY SECURITY"
"(safety for loved ones)"
"SOCIAL RECOGNITION"
"(respect, approval by others)"
"HONOURING OF PARENTS"
"(showing respect)"
"UNITY WITH NATURE"
"(fitting into nature)"
"A VARIED LIFE"
"(filled with challenge, novelty and change)"
"WISDOM"
"(a mature understanding of life)"
"AUTHORITY"
"(the right to lead or command)"
"TRUE FRIENDSHIP"
"(close, supportive friends)"
"NATIONAL SECURITY"
"(protecting the nation from enemies)"
"SELF-INDULGENT"
"(doing pleasant things)"
"A WORLD OF BEAUTY"
"(beauty of nature and the arts)"
"SOCIAL JUSTICE"
"(correcting injustice, care for the weak)"
"INDEPENDENT"
"(self-reliant, self-sufficient)"
"MODERATE"
"(avoiding extremes of feeling and action)"
"DARING"
"(seeking adventure, risk)"
"LOYAL"
"(faithful to my friends, group)"
"PRIVACY"
"(the right to have a private sphere)"
"SOCIAL ORDER"
"(stability of society)"
"AMBITIOUS"
"(aspiring, hard-working)"
"BROADMINDED"
"(tolerant of different ideas and beliefs)"
"HUMBLE"
"(modest, self-effacing)"
"DETACHMENT"
"(from worldly goods)"
"DARING"
"(seeking adventure, risk)"
"WISDOM"
"(a mature understanding of life)"
"PROTECTING THE ENVIRONMENT"
"(preserving nature)"
"INFLUENTIAL"
"(having an impact on people and events)"
“HONOURING OF PARENTS”
“(showing respect)”
“UNITY WITH NATURE”
“(lifting in to nature)”
“CHOOSING OWN GOALS”
“(selecting own purpose)”
“HEALTHY”
“(not being sick, physically or mentally)”
“CAPABLE”
“(competent, effective, efficient)”
“ACCEPTING MY PORTION IN LIFE”
“(submitting to circumstances)”
“SELF RESPECT”
“(belief in one’s own worth)”
“FREEDOM”
“(freedom of action and thought)”
“HONEST”
“(genuine, sincere)”
“POLITENESS”
“(courtesy, good manners)”
“CLEAN”
“(neat and tidy)”
“SOCIAL JUSTICE”
“(correcting injustice, care for the weak)”
“INTELLIGENT”
“(logical thinking)”
“PRESERVING MY PUBLIC IMAGE”
“(saving face)”
“OBEIDENT”
“(dutiful, meeting obligations)”
“A WORLD OF BEAUTY”
“(beauty of nature and the arts)”
“CURIOUS”
“(interested in everything, exploring)”
“A WORLD AT PEACE”
“(free of war and conflict)”
“A VARIED LIFE”
“(filled with challenge, novelty and change)”
“HELPFUL”
“(working for the welfare of others)”
“INTELLIGENT”
“(logical thinking)”
“INNER HARMONY”
“(at peace with myself)”
“INFLUENTIAL”
“(having an impact on people and events)”
“SELF-DISCIPLINE”
“(self-restraint, resistance to temptation)”
“SOCIAL POWER”
“(control over others)”
“MODERATE”
“(avoiding extremes of feeling and action)”
“HELPFUL”
“(working for the welfare of others)”
“ENJOYING LIFE”
“(enjoying food, leisure, sex, etc.)”
“CHOOSING OWN GOALS”
“(selecting own purpose)”
“HEALTHY”
“(not being sick, physically or mentally)”
"CAPABLE"
"(competent, effective, efficient)"
"SUCCESSFUL"
"(achieving goals)"
"ACCEPTING MY PORTION IN LIFE"
"(submitting to circumstances)"
"PRESERVING MY PUBLIC IMAGE"
"(saving face)"
"RESPONSIBLE"
"(dependable, reliable)"
"CURIOUS"
"(interested in everything, exploring)"
"FORGIVING"
"(willing to pardon others)"
"EQUALITY"
"(equal opportunity for all)"
"AN EXCITING LIFE"
"(stimulating experience)"
"SUCCESSFUL"
"(achieving goals)"
"CLEAN"
"(neat and tidy)"
"SELF-INDULGENT"
"(doing pleasant things)"
"SENSE OF BELONGING"
"(feeling that others care about me)"
"AMBITION"
"(aspiring, hard-working)"
"AUTHORITY"
"(the right to lead or command)"
"CREATIVITY"
"(uniqueness, imagination)"
"DETACHMENT"
"(from worldly goods)"
"ENJOYING LIFE"
"(enjoying food, leisure, sex, etc.)"
"WEALTH"
"(material possessions, money)"
"RESPECT FOR TRADITION"
"(preserving time-honoured traditions)"
"OBEYING"
"(dutiful, meeting obligations)"
"RECIPROCATION OF FAVOURS"
"(avoidance of indebtedness)"
"RESPONSIBLE"
"(dependable, reliable)"
INSTRUCTIONS

This is a simple word association task. There are no right or wrong answers.

- Rest your hands comfortably above the response keys

- A series of words will appear one at a time in the middle of the computer screen. Under each word will be a description of the word in brackets.

- Your task is to press one of the following keys to indicate your judgment of the target word as a GUIDING PRINCIPLE IN YOUR LIFE.

Use:

- .....................................................not at all important

- ......................................................slightly important

0 ......................................................moderately important

+ ......................................................very important

++ ....................................................supremely important

Try to:

- Be accurate and not in such a hurry that you regret a decision.
- Respond as quickly as possible
- Concentrate until the end of the task.

Thank You
INSTRUCTIONS

This is a simple word association task. There are no right or wrong answers.

• Rest your hands comfortably above the response keys

• A series of words will appear one at a time in the middle of the computer screen. Under each word will be a description of the word in brackets.

• Your task is to press one of the following keys to indicate your judgment of the target word as a GUIDING PRINCIPLE IN YOUR LIFE.

\[-1\quad 0\quad 1\quad 2\quad 3\quad 4\quad 5\quad 6\quad 7\]

Use:

-1 ........................................................opposed to

0 .........................................................not at all important

6 .........................................................very important

7 .........................................................of supreme importance

OR

any of the scale points in between

Try to:

- Be accurate and not in such a hurry that you regret a decision.
- Respond as quickly as possible
- Concentrate until the end of the task.

Thank You
RESULTS OF PRE-TEST STUDY 3

VOLUNTEERING FOR A NEEDY CAUSE

Related value: "Helpful"
Unrelated value: "Protecting the environment"

DISARMAMENT OF NUCLEAR WEAPONS

Related Value: "a world at peace"
Unrelated value: "CHOOSING OWN GOALS"

REHABILITATION OF PRISONERS

Related Value: "SOCIAL JUSTICE"
Unrelated Value: "unity with nature"

ACCEPTING ETHNIC MINORITIES

Related Value: "EQUALITY"
Unrelated Value: "a world of beauty"

RECYCLING OF WASTE

Related Value: "protecting the environment"
Unrelated Value: "HUMBLE"

OWNING UP IF UNDERCHARGED

Related Value: "HONESTY"
Unrelated Value: "clean"

ABORTION ON DEMAND

Related Value: "individual freedom"
Unrelated Value: "TRUE FRIENDSHIP"

ADOPTION OF CHILDREN BY GAYS

Related Value: "Broadminded"
Unrelated Value: "WEALTH"
INSTRUCTIONS

A word or phrase will appear in the centre of the screen in SMALL CASE letters – try to remember it. It will disappear from the screen quickly.

Next, a statement will appear in CAPITAL LETTERS. You are asked whether the statement intent is GOOD or BAD. You reply using the 2 keys:

\  /  
| Bad   Good |

When you press a key, the word will disappear and then the whole process will start again.

Example
forgiving
(you should try to remember this word)

WALKING RATHER THAN TAKING THE BUS
(you should decide if this is a good or bad thing)

You must respond QUICKLY – do not spend too long considering the answer.
Unrelated Value Prime: "protecting the environment"
Attitude Item: VOLUNTEERING FOR A NEEDY CAUSE

Related Value Prime: "a world at peace"
Attitude Item: DISARMAMENT OF NUCLEAR WEAPONS

Unrelated Value Prime: "unity with nature"
Attitude Item: REHABILITATION OF PRISONERS

Related Value Prime: "equality"
Attitude Item: ACCEPTING ETHNIC MINORITIES

Unrelated Value Prime: "humble"
Attitude Item: "RECYCLING OF WASTE"

Related Value Prime: "honesty"
Attitude Item: "OWNING UP IF UNDERCHARGED"

Unrelated Value Prime: "true friendship"
Attitude Item: ABORTION ON DEMAND

Related Value Prime: "broadminded"
Attitude Item: ADOPTION OF CHILDREN BY GAYS
Related Value Prime: “Helpful”
Attitude item: VOLUNTEERING FOR A NEEDY CAUSE

Unrelated Value Prime: “choosing own goals”
Attitude item: DISARMAMMENT OF NUCLEAR WEAPONS

Related Value Prime: “social justice”
Attitude item: REHABILITATION OF PRISONERS

Unrelated Value Prime: “a world of beauty”
Attitude item: ACCEPTING ETHNIC MINORITIES

Related Value Prime: “protecting the environment”
Attitude item: “RECYCLING OF WASTE

Unrelated Value Prime: “clean”
Attitude item: “OWNING UP IF UNDERCHARGED

Related value Prime: “individual freedom”
Attitude Item: ABORTION ON DEMAND

Unrelated Value Prime: “wealth”
Attitude item: ADOPTION OF CHILDREN BY GAYS
WORD RECOGNITION TASK

Please tick the words or phrases that you recognise seeing in lower-case during the experiment.

- Broadminded
- Clean
- Humble
- Health
- Choosing own goals
- Individual freedom
- Equality
- Unity with nature
- True friendship
- Excitement
VALUE IMPORTANCE SURVEY

Please list the following 4 values in order of their importance as GUIDING PRINCIPLES IN YOUR LIFE

A WORLD AT PEACE
PROTECTING THE ENVIRONMENT
INDIVIDUAL FREEDOM
BROADMINDED

Most
☐
☐
☐
☐

Least
☐
☐
☐
☐

THANK-YOU FOR YOUR HELP
Part A

ATTITUINAL SURVEY

This questionnaire is part of a research project on student attitudes. Similar projects are being conducted in other universities to perform a comparison of students' attitudes. There are 30 questions about your attitudes.

You are asked to rate how important each attitude is for you as a guiding principle in YOUR life, using the scale provided. Try to distinguish as much as possible between the attitudes by using all the numbers. Please try to answer as honestly as possible, there are no right or wrong responses.

The rating scale we want to use runs:

\[ -2 \ldots \quad -1 \quad 0 \quad 1 \quad 2 \]

strongly disagree disagree neither agree agree strongly agree
disagree nor disagree

Circle the number opposite the attitude, according to the scale above

1. State funding of the arts should be abolished.
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

2. The Latin language should be put on the national curriculum
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

3. Co-education is preferable to single-sex education
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

4. Contact sports such as rugby boxing should be abolished-
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

5. Parents should have the right to smack their children-
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

6. Nursery education should be provided by the state free of charge
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

7. The death penalty should be introduced for murder
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]

8. A curfew should be introduced for children under ten years of age when unaccompanied by an adult
   \[ -2 \quad -1 \quad 0 \quad 1 \quad 2 \]
9. It is an individual’s right to choose what drugs to use.

10. Britain’s licensing laws are outdated and draconian.

11. Mandatory prison sentences should be imposed for third convictions of burglary.

12. Sex offending could be cured by the chemical castration of offenders.

13. Complementary medicine (e.g. acupuncture) should be provided by the N.H.S.

14. Contraception should be freely available at any age.

15. The benefits of genetic engineering outweigh the dangers.

16. State funding for space exploration should be increased.

17. Global warming is the biggest danger facing the modern world.

18. In the interests of society as a whole, we should censor the Internet.

19. The government should promote privatised healthcare.

20. National service should be reintroduced in Britain.

21. A maximum limit should be set on all salaries.

22. Community work should be made compulsory for all able recipients of welfare.

23. The prosecution of war criminals is a good thing.

24. A National ID card encoding personal information (e.g. photo, fingerprint, criminal and bank details, passport, driving license) should be introduced by the Government.
25. Abortion should always be allowed on demand
   -2 -1 0 1 2

26. Begging in public places by those genuinely in need should be tolerated
   -2 -1 0 1 2

27. Gambling should be banned for the under 21’s
   -2 -1 0 1 2

28. Homosexual couples should be allowed to adopt children
   -2 -1 0 1 2

29. Voluntary euthanasia should be made legal
   -2 -1 0 1 2

30. The idea of life-long marriage is outdated
   -2 -1 0 1 2

THANK-YOU
THE VALUES SURVEY

This questionnaire is part of a research project examining student values. There are five sections.

Please try to answer all questions as honestly as possible. Do not spend too much time thinking about any one question, there are no right and wrong answers. All questions will be entirely anonymous and the information you give will be treated with complete confidentiality.

THANK YOU FOR YOUR HELP.

Part A
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below.

Use -1 if any values are opposed to the principles that guide you. Use 7 for any value of supreme importance as a guiding principle in your life. Use 0 if a value is not at all important to you, and 6 if a value is very important to you.

Creativity (uniqueness, imagination)  
-1 0 1 2 3 4 5 6 7

Freedom (freedom of action and thought)  
-1 0 1 2 3 4 5 6 7

Daring (seeking adventure, risk)  
-1 0 1 2 3 4 5 6 7

Enjoying Life (enjoying food, leisure, sex, etc.)  
-1 0 1 2 3 4 5 6 7

Humble (modest, self-effacing)  
-1 0 1 2 3 4 5 6 7

Politeness (courtesy, good manners)  
-1 0 1 2 3 4 5 6 7

Family Security (safety for loved ones)  
-1 0 1 2 3 4 5 6 7

Part B
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below.

Use -1 if any values are undesirable. Use 7 for any value of which is supremely desirable. Use 0 if a value is not at all desirable, and 6 if a value is very desirable. Circle the number opposite the value, according to the scale above.

-1 0 1 2 3 4 5 6 7
Freedom (freedom of action and thought)
-1 0 1 2 3 4 5 6 7
A Varied Life (filled with challenge, novelty and change)
-1 0 1 2 3 4 5 6 7
Pleasure ... (gratification of desire)
-1 0 1 2 3 4 5 6 7
Accepting My Portion in Life (submitting to circumstances)
-1 0 1 2 3 4 5 6 7
Obedient (dutiful, meeting obligations)
-1 0 1 2 3 4 5 6 7
National Security (protecting the nation from enemies)
-1 0 1 2 3 4 5 6 7

Part C
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if you never think about the value. Use 7 for any value which you always think about. Use 0 for a value which you rarely think about, and 6 for a value which you frequently think about.

Independent (self-reliant, self-sufficient)
-1 0 1 2 3 4 5 6 7
An Exciting Life (stimulating experience)
-1 0 1 2 3 4 5 6 7
Devout (holding to religious faith and belief)
-1 0 1 2 3 4 5 6 7
Self-Discipline (self-restraint, resistance to temptation)
-1 0 1 2 3 4 5 6 7
Social Order (stability of society)
-1 0 1 2 3 4 5 6 7
Freedom (freedom of action and thought)
-1 0 1 2 3 4 5 6 7

Part D
Please rate how IMPORTANT TO SOCIETY each of the following values are by circling a number using the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if any values are unimportant. Use 7 for any value of supreme importance. Use 0 if a value is not at all important and 6 for any value you consider to be very important. Circle the number opposite the value, according to the scale above.

Curious (interested in everything, exploring)
-1 0 1 2 3 4 5 6 7
Respect for Tradition (preserving time-honoured customs)
-1 0 1 2 3 4 5 6 7
Honouring of Parents and elders (showing respect)
-1 0 1 2 3 4 5 6 7
Clean (neat and tidy)
-1 0 1 2 3 4 5 6 7
Freedom (freedom of action and thought)
-1 0 1 2 3 4 5 6 7
Healthy (not being sick, physically or mentally)
-1 0 1 2 3 4 5 6 7

Part E
Please rate how FOOLISH / WISE each of the following values are by circling a number according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if any values which you consider foolish. Use 7 for any value you consider wise. Use 0 if a value is not at all wise and 6 if a value is extremely wise.

Choosing Own Goals (selecting own purpose)
-1 0 1 2 3 4 5 6 7
Moderate (avoiding extremes of feeling and action)
-1 0 1 2 3 4 5 6 7
Reciprocation of Favours (avoidance of indebtedness)
-1 0 1 2 3 4 5 6 7
Freedom (freedom of action and thought)
-1 0 1 2 3 4 5 6 7
Self Respect (belief in one's own worth)
-1 0 1 2 3 4 5 6 7
Sense of Belonging (feeling that others care about me)
-1 0 1 2 3 4 5 6 7

Please fill in your : Sex ...... Age ............
Course ..................................................
First Language ......................................

THANK-YOU
APPENDIX D (iii)

THE VALUES SURVEY

This questionnaire is part of a cross-national research project on human values and their evaluation in which the University of Surrey is taking part. The overall aim is to provide a comparison of peoples' values, based on a theory of a universal structure of values.

There are five sections. Please try to answer all questions as honestly as possible. Do not spend too much time thinking about any one question, there are no right and wrong answers. All questions will be entirely anonymous and the information you give will be treated with complete confidentiality.

Thank you very much for your help.

Part A

Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below.

\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]

Use -1 if any values are opposed to the principles that guide you. Use 7 for any value of supreme importance as a guiding principle in your life. Use 0 if a value is not at all important to you, and 6 if a value is very important to you.

Creativity (uniqueness, imagination)
-1 0 1 2 3 4 5 6 7
Daring (seeking adventure, risk)
-1 0 1 2 3 4 5 6 7
Enjoying Life (enjoying food, leisure, sex, etc.)
-1 0 1 2 3 4 5 6 7
Humble (modest, self-effacing)
-1 0 1 2 3 4 5 6 7
Politeness (courtesy, good manners)
-1 0 1 2 3 4 5 6 7
Family Security (safety for loved ones)
-1 0 1 2 3 4 5 6 7

Part B
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if any values are undesirable. Use 7 for any value of which is supremely desirable. Use 0 if a value is not at all desirable, and 6 if a value is very desirable. Circle the number opposite the value, according to the scale above.

A Varied Life (filled with challenge, novelty and change)  
-1 0 1 2 3 4 5 6 7
Pleasure (gratification of desire)  
-1 0 1 2 3 4 5 6 7
Accepting My Portion in Life (submitting to circumstances)  
-1 0 1 2 3 4 5 6 7
Obedient (dutiful, meeting obligations)  
-1 0 1 2 3 4 5 6 7
National Security (protecting the nation from enemies)  
-1 0 1 2 3 4 5 6 7

Part C
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if you never think about the value. Use 7 for any value which you always think about. Use 0 for a value which you rarely think about, and 6 for a value which you frequently think about.

Independent (self-reliant, self-sufficient)  
-1 0 1 2 3 4 5 6 7
An Exciting Life (stimulating experience)  
-1 0 1 2 3 4 5 6 7
Devout (holding to religious faith and belief)  
-1 0 1 2 3 4 5 6 7
Self-Discipline (self-restraint, resistance to temptation)  
-1 0 1 2 3 4 5 6 7
Social Order (stability of society)  
-1 0 1 2 3 4 5 6 7

Part D
Please rate how IMPORTANT TO SOCIETY each of the following values are by circling a number using the scale below.
Use -1 if any values are unimportant. Use 7 for any value of supreme importance. Use 0 if a value is not at all important and 6 for any value you consider to be very important. Circle the number opposite the value, according to the scale above.

**Curious (interested in everything, exploring)**
-1 0 1 2 3 4 5 6 7

**Respect for Tradition (preserving time-honoured customs)**
-1 0 1 2 3 4 5 6 7

**Honouring of Parents and elders (showing respect)**
-1 0 1 2 3 4 5 6 7

**Clean (neat and tidy)**
-1 0 1 2 3 4 5 6 7

**Healthy (not being sick, physically or mentally)**
-1 0 1 2 3 4 5 6 7

**Part E**

Please rate how FOOLISH / WISE each of the following values are by circling a number according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if any values which you consider foolish. Use 7 for any value you consider wise. Use 0 if a value is not at all wise and 6 if a value is extremely wise.

**Choosing Own Goals (selecting own purpose)**
-1 0 1 2 3 4 5 6 7

**Moderate (avoiding extremes of feeling and action)**
-1 0 1 2 3 4 5 6 7

**Reciprocation of Favours (avoidance of indebtedness)**
-1 0 1 2 3 4 5 6 7

**Freedom (freedom of action and thought)**
-1 0 1 2 3 4 5 6 7

**Self Respect (belief in one's own worth)**
-1 0 1 2 3 4 5 6 7

**Sense of Belonging (feeling that others care about me)**
-1 0 1 2 3 4 5 6 7

Please fill in your Sex ....... Age ...........
Course ..........................................
First Language ........................................

THANK-YOU
THE VALUES SURVEY
This questionnaire is part of a cross-national research project on human values and their evaluation in which the University of Surrey is taking part. The overall aim is to provide a comparison of peoples' values, based on a theory of a universal structure of values.

There are five sections. Please try to answer all questions as honestly as possible. Do not spend too much time thinking about any one question, there are no right and wrong answers. All questions will be entirely anonymous and the information you give will be treated with complete confidentiality.

Thank you very much for your help.

Part A
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below.

Use -1 if any values are opposed to the principles that guide you. Use 7 for any value of supreme importance as a guiding principle in your life. Use 0 if a value is not at all important to you, and 6 if a value is very important to you.

Pleasure (gratification of desire)
-1 0 1 2 3 4 5 6 7
Social Justice (correcting injustice, care for the weak)
-1 0 1 2 3 4 5 6 7
Successful (achieving goals)
-1 0 1 2 3 4 5 6 7
Social Power (control over others)
-1 0 1 2 3 4 5 6 7
Broadminded (tolerant of different ideas and beliefs)
-1 0 1 2 3 4 5 6 7
Helpful (working for the welfare of others)
-1 0 1 2 3 4 5 6 7

Part B
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below.

-1 0 1 2 3 4 5 6 7
Use -1 if any values are undesirable. Use 7 for any value of which is supremely desirable. Use 0 if a value is not at all desirable, and 6 if a value is very desirable. Circle the number opposite the value, according to the scale above.

Enjoying Life (enjoying food, leisure, sex, etc.)
-1 0 1 2 3 4 5 6 7

Capable (competent, effective, efficient)
-1 0 1 2 3 4 5 6 7

Authority (the right to lead or command)
-1 0 1 2 3 4 5 6 7

Wisdom (a mature understanding of life)
-1 0 1 2 3 4 5 6 7

Social Justice (correcting injustice, care for the weak)
-1 0 1 2 3 4 5 6 7

Honest (genuine, sincere)
-1 0 1 2 3 4 5 6 7

Unity With Nature (fitting in to nature)
-1 0 1 2 3 4 5 6 7

**Part C**

Please rate how OFTEN YOU THINK ABOUT the following values according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if you never think about the value. Use 7 for any value which you always think about. Use 0 for a value which you rarely think about, and 6 for a value which you frequently think about.

Social Justice (correcting injustice, care for the weak)
-1 0 1 2 3 4 5 6 7

Ambitious (aspiring, hard-working)
-1 0 1 2 3 4 5 6 7

Wealth (material possessions, money)
-1 0 1 2 3 4 5 6 7

Wisdom (a mature understanding of life)
-1 0 1 2 3 4 5 6 7

Forgiving (willing to pardon others)
-1 0 1 2 3 4 5 6 7

Mature Love (deep emotional and spiritual intimacy)
-1 0 1 2 3 4 5 6 7

Protecting the Environment (preserving nature)
-1 0 1 2 3 4 5 6 7

**Part D**

Please rate how IMPORTANT TO SOCIETY each of the following values are by circling a number using the scale below.
Use -1 if any values are unimportant. Use 7 for any value of supreme importance. Use 0 if a value is not at all important and 6 for any value you consider to be very important. Circle the number opposite the value, according to the scale above.

| Influential (having an impact on people and events) | -1 0 1 2 3 4 5 6 7 |
| Preserving My Public Image (saving face) | -1 0 1 2 3 4 5 6 7 |
| Loyal (faithful to my friends, group) | -1 0 1 2 3 4 5 6 7 |
| True Friendship (close, supportive friends) | -1 0 1 2 3 4 5 6 7 |
| Social Justice (correcting injustice, care for the weak) | -1 0 1 2 3 4 5 6 7 |

**Part E**

Please rate how unnecessary / necessary important each of the following values are FOOLISH / WISE by circling a number according to the scale below.

| -1 0 1 2 3 4 5 6 7 |

Use -1 if any values which you consider foolish. Use 7 for any value you consider wise. Use 0 if a value is not at all wise and 6 if a value is extremely wise.

| Intelligent (logical thinking) |
| Social Recognition (respect, approval by others) | -1 0 1 2 3 4 5 6 7 |
| Equality (equal opportunity for all) | -1 0 1 2 3 4 5 6 7 |
| Social Justice (correcting injustice, care for the weak) | -1 0 1 2 3 4 5 6 7 |
| Responsible (dependable, reliable) | -1 0 1 2 3 4 5 6 7 |
| A World of Beauty (beauty of nature and the arts) | -1 0 1 2 3 4 5 6 7 |

Please fill in your: Sex ...... Age .......... Course ....................................................

First Language ..................................................
THE VALUES SURVEY

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There are five sections. Please try to answer all questions as honestly as possible. Do not spend too much time thinking about any one question, there are no right and wrong answers. All questions will be entirely anonymous and the information you give will be treated with complete confidentiality.

Thank you very much for your help.

Part A
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if any values are opposed to the principles that guide you. Use 7 for any value of supreme importance as a guiding principle in your life. Use 0 if a value is not at all important to you, and 6 if a value is very important to you.

Pleasure (gratification of desire)
-1 0 1 2 3 4 5 6 7

Successful (achieving goals)
-1 0 1 2 3 4 5 6 7

Social Power (control over others)
-1 0 1 2 3 4 5 6 7

Broadminded (tolerant of different ideas and beliefs)
-1 0 1 2 3 4 5 6 7

Helpful (working for the welfare of others)
-1 0 1 2 3 4 5 6 7

Part B
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below.

-1 0 1 2 3 4 5 6 7

APPENDIX D (v)
Use -1 if any values are undesirable. Use 7 for any value of which is supremely desirable. Use 0 if a value is not at all desirable, and 6 if a value is very desirable. Circle the number opposite the value, according to the scale above.

Enjoying Life (enjoying food, leisure, sex, etc.)
-1 0 1 2 3 4 5 6 7
Capable (competent, effective, efficient)
-1 0 1 2 3 4 5 6 7
Authority (the right to lead or command)
-1 0 1 2 3 4 5 6 7
Wisdom (a mature understanding of life)
-1 0 1 2 3 4 5 6 7
Honest (genuine, sincere)
-1 0 1 2 3 4 5 6 7
Unity With Nature (fitting in to nature)
-1 0 1 2 3 4 5 6 7

Part C
Please rate how OFTEN YOU THINK ABOUT the following values according to the scale below.

-1 0 1 2 3 4 5 6 7

Use -1 if you never think about the value. Use 7 for any value which you always think about. Use 0 for a value which you rarely think about, and 6 for a value which you frequently think about.

Ambitious (aspiring, hard-working)
-1 0 1 2 3 4 5 6 7
Wealth (material possessions, money)
-1 0 1 2 3 4 5 6 7
Wisdom (a mature understanding of life)
-1 0 1 2 3 4 5 6 7
Forgiving (willing to pardon others)
-1 0 1 2 3 4 5 6 7
Mature Love (deep emotional and spiritual intimacy)
-1 0 1 2 3 4 5 6 7
Protecting the Environment (preserving nature)
-1 0 1 2 3 4 5 6 7

Part D

Please rate how IMPORTANT TO SOCIETY each of the following values are by circling a number using the scale below.

-1 0 1 2 3 4 5 6 7
Use -1 if any values are unimportant. Use 7 for any value of supreme importance. Use 0 if a value is not at all important and 6 for any value you consider to be very important. Circle the number opposite the value, according to the scale above.

Influential (having an impact on people and events)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Preserving My Public Image (saving face)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Loyal (faithful to my friends, group)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
True Friendship (close, supportive friends)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]

Part E

Please rate how unnecessary / necessary important each of the following values are FOOLISH / WISE by circling a number according to the scale below.

\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Use -1 if any values which you consider foolish. Use 7 for any value you consider wise. Use 0 if a value is not at all wise and 6 if a value is extremely wise.

Intelligent (logical thinking)

\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Social Recognition (respect, approval by others)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Equality (equal opportunity for all)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Responsible (dependable, reliable)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
Social Justice (correcting injustice, care for the weak)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]
A World of Beauty (beauty of nature and the arts)
\[-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7\]

Please fill in your: Sex ........  Age ...........
Course ..................................................
First Language .......................................
The purpose of the following task is to assess the quality of samples of writing.

Overleaf is an extract from an article concerning the Introduction of a National Identity Card. Your task is to read the passage carefully and then complete the questions overleaf. There are no right or wrong answers; it is your opinion, which counts.
One recent initiative by the British Government is the idea of introducing National Identity cards. In May last year they released a green paper for discussion concerning a card which would feature a huge range of information including photographic images, retina and fingerprint records, signature, bank and credit details and criminal record. This card would also replace the current driving license and passport.

National identity cards have however received a number of criticisms.

Firstly, identity cards would represent a major intrusion by the government into the privacy of the individual and would greatly increase state control. We value our liberties strongly and should be wary of any attempt to undermine them. The chance of losing all forms of identification together would be high and immensely inconvenient. The police are always technologically less advanced than criminals, as credit card fraud and on-line financial crime suggests. If criminals did obtain card-reading technology, they would gain access to all parts of our lives via a stolen card and impersonation would become much easier.

If a voluntary identity card was introduced, - in order to solicit public support before card-holding became compulsory - suspicion would fall on those who did not carry them - an infringement of civil liberties. With separate cards we have a choice about whether and when to carry them, and which ones to take out with us.

Smart-card technology is so advanced as to be dangerous; we would have no idea what information was contained on our ID cards that could be read by others, and no choice about how much information to declare. Employers and the police could discriminate against us on the basis of hidden facts that we should have the right to keep hidden.

There seems to be a fair bit of dissent among the various factions in all parties. However, the public does have its chance to air its views until the 30th September. So take your opportunity to voice your concerns over the introduction of ID cards before it alters your life for good.
One recent initiative by the British Government is the idea of introducing National Identity cards. In May last year they released a green paper for discussion concerning a card which would feature a huge range of information including photographic images, retina and fingerprint records, signature, bank and credit details and criminal record. This card would also replace the current driving license and passport.

National identity cards have however received a number of criticisms.

The cost of introducing 60 million smart cards and vast numbers of card-reading machines would be enormous. As well as financial difficulties, the administration involved in producing identity cards would be immense and some transactions could be slowed down if people forget or mislay their cards.

In order to be effective, card-carrying would have to be compulsory (as with the road-tax disc) and failure to produce it would be a crime. Enforcing this policy would use up valuable police and court time. The national identity card would become just another bit of plastic that you have got to carry around. It could easily get confused with other cards (AA card, Tesco Club card, video card etc.)

There seems to be a fair bit of dissent among the various factions in all parties. However, the public does have its chance to air its views until the 30th September. So take your opportunity to voice our concerns over the introduction of ID cards by writing before the additional bureaucracy and red tape affects you.
The prosecution of war criminals has traditionally concentrated on suspected Nazi camp guards and civilian officers responsible for millions of deaths during the Second World War. A lot of evidence was lost in the chaotic post-war period or was hidden behind the Iron Curtain. Since the fall of communism in the 1980’s it is now possible to identify many more suspects. However, more recent atrocities in Rwanda and Bosnia and the prosecution of ‘current’ criminals has opened up the debate about the war crime trials.

War crime trials are based on fundamental principles of justice and go far beyond national laws or legislative bodies. Morally they are essential.

No matters how long ago war crimes - such as participation in genocide, torture and murderous reprisals against civilians - took place we must never forget them. If evidence for war crimes during the Second World War had come to light immediately, suspects would definitely have been prosecuted. They should not escape justice simply because of the time lapse. Age is no defence.

Trials are in the interests of surviving victims. Victims are among those most in favour of prosecution, and we should not make assumptions about whether they can cope with the pain of testifying. Many have had to live with horrifying memories for years, and to see justice done would achieve a cathartic closure.

Crimes such as participation in genocide, torture and murderous reprisals against civilians are abhorrent. Justice should be pursued without considering excuses such as age, rank or fear of consequences as excuses for perpetrating appalling and sickening atrocities. We owe justice to the victims to ensure that perpetrators of war crimes do not go unpunished.
The prosecution of war criminals has traditionally concentrated on suspected Nazi camp guards and civilian officers responsible for many deaths during the Second World War. Often they were not German were able to evade prosecution after 1945 by settling around the world, while evidence was lost in the chaotic postwar period or was hidden behind the Iron Curtain. Since the fall of communism in the 1980's it is now possible to identify many more suspects. However, more recent atrocities in Rwanda and Bosnia and the prosecution of 'current' criminals have opened up the debate about the war crime trials. Furthermore, war crime trials may also encourage public awareness of the past since many of the trials involve crimes committed during the Second World War.

War crime trials may act as a possible deterrent to potential war criminals who worry that they too might be caught and face trial. With the terrible genocide in recent years, it is important to prosecute past war criminals to show that such atrocities will never go unpunished.

The prosecution of war criminals may also improve international relations through cooperation and partnership on independent tribunals. It may also foster a sense of a united international community working together to uphold a moral and humane code of behaviour. Trials represent an opportunity to show moral superiority i.e. that some states are more civilized than others and that there are standards to be aspired to.
READABILITY SURVEY

Please answer the following questions in the spaces provided by ticking the relevant box. There are no right or wrong answers; it is your opinion, which we are interested in.

1. From the text how old would you estimate the writer to be?
   - Under 25 years
   - 25 - 45 years
   - Over 45 years
   - It is impossible to tell

2. In your opinion, does the style of the text suggest it was written by:
   - A male
   - A female
   - It is impossible to tell?

3. Which of the following do you think is the source of the article
   - Newspaper
   - Periodical
   - Letter
   - Radio transcript
   - It is impossible to tell

4. Is the text written by a native English speaker?
   - Yes
   - No
   - It is impossible to tell

5. Do you think that the writing is grammatically correct?
   - Yes
   - No

6. How convincing do you consider the arguments in the editorial to be?
   - Extremely convincing
   - Convincing
   - Very convincing
   - A little convincing
   - Not at all convincing

7. Do you think the article was written by:
   - A journalist
   - A scientist
   - A politician?
   - It is impossible to tell

THANK-YOU
NEWS ITEM OPINION SURVEY

Below are statements about topics that have been in the news over the past few months. Please indicate the extent to which you agree or disagree with the statements by circling a number on each of the scales below.

1. People in London have recently been urged by the Government not to give directly to beggars but to donate money to official charities.

   Most beggars want money to pay for alcohol and cigarettes or for more serious drugs. We should not therefore give them money to feed these addictions:

   Completely Disagree 1  2  3  4  5 Completely disagree

   We have a duty to help beggars by giving money to them on the streets as well as through charities:

   Completely Disagree 1  2  3  4  5 Completely disagree

   It is the responsibility of the Government and Social Services to provide and keep people from needing to beg:

   Completely Disagree 1  2  3  4  5 Completely disagree

2. As was recently in the news, Sarah Payne, aged 8 was recently sexually assaulted and murdered, whilst out playing. This has raised extensive debate over the issue of publicising the names and addresses of known paedophiles and sex offenders. To what extent so you agree with the following?

   The public needs to be informed of the whereabouts of sex offenders after they are released from prison so that they can take the necessary precautions:

   Completely Disagree 1  2  3  4  5 Completely disagree

   The publication of sex offender registers stigmatises offenders who have been successfully rehabilitated and no longer pose a problem to society:

   Completely Disagree 1  2  3  4  5 Completely disagree

   A register of past sex offenders will enable the police to pursue leads to new crimes more quickly and eliminate suspects:

   Completely Disagree 1  2  3  4  5 Completely disagree
3. There have recently been widespread student demonstrations against the cost of a university education. To what extent so you agree with the following?

It is right that students should pay university tuition fees:

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

A graduate tax should be introduce to help fund university education:

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

More scholarships should be made available for students of exceptional academic ability.

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

4. The private lives of actors, singers, and sports personalities are constantly subjected to media scrutiny especially in the tabloid papers. There is current debate over the rights of the press versus those of famous individuals. To what extent so you agree with the following?

Public exposure is one of the prices of fame and power. Celebrities realise this from the start and if they do not like it they should not enter the public sphere:

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

Intrusive photographs of celebrities or “kiss and tell” stories from their alleged lovers should be banned:

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

As long as we keep buying, in our millions, the papers and magazines containing such stories, it is hypocritical to criticise the media for its intrusion:

| Completely Disagree | 1 | 2 | 3 | 4 | 5 | Completely disagree |

THANK-YOU
PART 1
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROADMINDED (tolerant of different ideas and beliefs)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>WISDOM (a mature understanding of life)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>SOCIAL JUSTICE (correcting injustice)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>EQUALITY (equal opportunity for all)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>WORLD AT PEACE (free of conflict and war)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

PART 2
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Value</th>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL JUSTICE (correcting injustice)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
<td>6</td>
</tr>
<tr>
<td>EQUALITY (equal opportunity for all)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>WORLD OF BEAUTY (beauty of nature and the arts)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>CAPABLE (competent, effective, efficient)</td>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
PART 3
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
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<td>4</td>
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<td>5</td>
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<td>6</td>
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<td>7</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOCIAL JUSTICE (correcting injustice)
-1 0 1 2 3 4 5 6 7

INTELLIGENT (logical thinking)
-1 0 1 2 3 4 5 6 7

PROTECTING THE ENVIRONMENT (preserving nature)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7

PART 4
Please rate how IMPORTANT TO SOCIETY each of the following values is by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Opposed To</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unimportant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slightly Important</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Important</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEALTH (material possessions, money)
-1 0 1 2 3 4 5 6 7

SOCIAL JUSTICE (correcting injustice)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7
MATURE LOVE (deep emotional and spiritual love)  
-1 0 1 2 3 4 5 6 7

TRUE FRIENDSHIP (close, supportive friends)  
-1 0 1 2 3 4 5 6 7

PART 5
Please rate the extent to which you DISRESPECT/RESPECT an individual with the following values are by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Disrespect</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Respect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not Respect</td>
<td>Slightly Respect</td>
<td>Respect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

POLITENESS (courtesy, good manners)  
-1 0 1 2 3 4 5 6 7

SOCIAL JUSTICE (correcting injustice)  
-1 0 1 2 3 4 5 6 7

SOCIAL ORDER (stability in society)  
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)  
-1 0 1 2 3 4 5 6 7

PRIVACY (the right to have a private life)  
-1 0 1 2 3 4 5 6 7

PLEASE FILL IN YOUR
Sex: __________
Age: _______
PART 1
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Opposed To</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unimportant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slightly Important</td>
</tr>
<tr>
<td>Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BROADMINDED (tolerant of different ideas and beliefs)
-1 0 1 2 3 4 5 6 7

WISDOM (a mature understanding of life)
-1 0 1 2 3 4 5 6 7

DARING (seeking adventure, risk)
-1 0 1 2 3 4 5 6 7

HONESTY (genuine, sincere)
-1 0 1 2 3 4 5 6 7

WORLD AT PEACE (free of conflict and war)
-1 0 1 2 3 4 5 6 7

PART 2
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Undesirable</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slightly Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Desirable</td>
</tr>
</tbody>
</table>

SOCIAL JUSTICE (correcting injustice)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7

WORLD OF BEAUTY (beauty of nature and the arts)
-1 0 1 2 3 4 5 6 7

CAPABLE (competent, effective, efficient)
PART 3
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below:

Never _______ 0 _______ 1 _______ 2 _______ 3 _______ 4 _______ 5 _______ 6 _______ 7

<table>
<thead>
<tr>
<th>Value</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEAN (neat, tidy)</td>
<td>-1</td>
</tr>
<tr>
<td>INTELLIGENT (logical thinking)</td>
<td>-1</td>
</tr>
<tr>
<td>PROTECTING THE ENVIRONMENT (preserving nature)</td>
<td>-1</td>
</tr>
<tr>
<td>HEALTHY (not being sick, physically or mentally)</td>
<td>-1</td>
</tr>
</tbody>
</table>

PART 4
Please rate how IMPORTANT TO SOCIETY each of the following values is by circling a number using the scale below:

Opposed To -1 _______ 0 _______ 1 _______ 2 _______ 3 _______ 4 _______ 5 _______ 6 _______ 7 Extremely Important

<table>
<thead>
<tr>
<th>Value</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEALTH (material possessions, money)</td>
<td>-1</td>
</tr>
<tr>
<td>PLEASURE (gratification of desire)</td>
<td>-1</td>
</tr>
<tr>
<td>LOYAL (faithful to friends, group)</td>
<td>-1</td>
</tr>
</tbody>
</table>
MATURE LOVE (deep emotional and spiritual love)

TRUE FRIENDSHIP (close, supportive friends)

PART 5
Please rate the extent to which you DISRESPECT/RESPECT an individual with the following values are by circling a number according to the scale below:


POLITENESS (courtesy, good manners)

SOCIAL ORDER (stability in society)

EQUALITY (equal opportunity for all)

PRIVACY

(the right to have a private life)

PLEASE FILL IN YOUR
Sex: _____
Age: _____

THANK-YOU
PART 1
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Opposed To</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unimportant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slightly Important</td>
</tr>
<tr>
<td>Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BROADMINDED (tolerant of different ideas and beliefs)
-1 0 1 2 3 4 5 6 7

WISDOM (a mature understanding of life)
-1 0 1 2 3 4 5 6 7

SUCCESS (achieving goals)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7

WORLD AT PEACE (free of conflict and war)
-1 0 1 2 3 4 5 6 7

PART 2
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Undesirable</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slightly Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Desirable</td>
</tr>
</tbody>
</table>

SOCIAL JUSTICE (correcting injustice)
-1 0 1 2 3 4 5 6 7

SUCCESS (achieving goals)
-1 0 1 2 3 4 5 6 7

WORLD OF BEAUTY (beauty of nature and the arts)
-1 0 1 2 3 4 5 6 7

CAPABLE (competent, effective, efficient)
PART 3
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below:

\[
\begin{array}{cccccccc}
\text{Never} & -1 & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Occasionally} & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Frequently} & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\end{array}
\]

SUCCESS (achieving goals)
-1 0 1 2 3 4 5 6 7

INTELLIGENT (logical thinking)
-1 0 1 2 3 4 5 6 7

PROTECTING THE ENVIRONMENT (preserving nature)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7

PART 4
Please rate how IMPORTANT TO SOCIETY each of the following values is by circling a number using the scale below:

\[
\begin{array}{cccccccc}
\text{Opposed To} & -1 & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Unimportant} & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Slightly Important} & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Important} & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{Extremely Important} & 3 & 4 & 5 & 6 & 7 \\
\end{array}
\]

WEALTH (material possessions, money)
-1 0 1 2 3 4 5 6 7

SUCCESS (achieving goals)
-1 0 1 2 3 4 5 6 7

MATURE LOVE (deep emotional and spiritual love)
-1 0 1 2 3 4 5 6 7
TRUE FRIENDSHIP (close, supportive friends)
-1 0 1 2 3 4 5 6 7

PART 5
Please rate the extent to which you DISRESPECT/RESPECT an individual with the following values are by circling a number according to the scale below:

<table>
<thead>
<tr>
<th></th>
<th>Disrespect</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Respect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do not Respect</td>
<td>Slightly Respect</td>
<td>Respect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

POLITENESS (courtesy, good manners)
-1 0 1 2 3 4 5 6 7

SUCCESS (achieving goals)
-1 0 1 2 3 4 5 6 7

SOCIAL ORDER (stability in society)
-1 0 1 2 3 4 5 6 7

PRIVACY (the right to have a private life)
-1 0 1 2 3 4 5 6 7

PLEASE FILL IN YOUR
Sex: _____
Age: _____
PART 1
Please rate how important each of the following values are as a GUIDING PRINCIPLE IN YOUR LIFE by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Opposed To</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unimportant</td>
<td>Slightly Important</td>
<td>Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BROADMINDED (tolerant of different ideas and beliefs)
-1  0  1  2  3  4  5  6  7

WISDOM (a mature understanding of life)
-1  0  1  2  3  4  5  6  7

DARING (seeking adventure, risk)
-1  0  1  2  3  4  5  6  7

HONESTY (genuine, sincere)
-1  0  1  2  3  4  5  6  7

WORLD AT PEACE (free of conflict and war)
-1  0  1  2  3  4  5  6  7

PART 2
Please rate how UNDESIRABLE / DESIRABLE each of the following values are by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Undesirable</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Slightly Desirable</td>
<td>Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUCCESS (achieving goals)
-1  0  1  2  3  4  5  6  7

EQUALITY (equal opportunity for all)
-1  0  1  2  3  4  5  6  7

WORLD OF BEAUTY (beauty of nature and the arts)
-1  0  1  2  3  4  5  6  7

CAPABLE (competent, effective, efficient)
PART 3
Please rate how OFTEN YOU THINK ABOUT the following values by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Never</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

SUCCESSFUL (achieving goals)
-1 0 1 2 3 4 5 6 7

CLEAN (neat, tidy)
-1 0 1 2 3 4 5 6 7

INTELLIGENT (logical thinking)
-1 0 1 2 3 4 5 6 7

PROTECTING THE ENVIRONMENT (preserving nature)
-1 0 1 2 3 4 5 6 7

HEALTHY (not being sick, physically or mentally)
-1 0 1 2 3 4 5 6 7

PART 4
Please rate how IMPORTANT TO SOCIETY each of the following values is by circling a number using the scale below:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Extremely Important</th>
<th>Very Important</th>
<th>Important</th>
<th>Slightly Important</th>
<th>Unimportant</th>
<th>Opposed To</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

WEALTH (material possessions, money)
-1 0 1 2 3 4 5 6 7

PLEASURE (gratification of desire)
-1 0 1 2 3 4 5 6 7

LOYAL (faithful to friends, group)
PART 5
Please rate the extent to which you DISRESPECT/RESPECT an individual with the following values are by circling a number according to the scale below:

<table>
<thead>
<tr>
<th>Disrespect</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Respect</th>
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<tbody>
<tr>
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<td>Respect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

POLITENESS (courtesy, good manners)
-1 0 1 2 3 4 5 6 7

SOCIAL ORDER (stability in society)
-1 0 1 2 3 4 5 6 7

EQUALITY (equal opportunity for all)
-1 0 1 2 3 4 5 6 7

PRIVACY
-1 0 1 2 3 4 5 6 7
(the right to have a private life)

PLEASE FILL IN YOUR
Sex: _______
Age: __________

THANK-YOU
The purpose of the following task is to assess the quality of samples of writing.

Below is an extract from an article concerning University Tuition Fees. Your task is to read the passage carefully and then complete the questions overleaf. There are no right or wrong answers; it is YOUR OPINION that counts.
Tony Blair's government has swapped the university student maintenance grants (for accommodation, food, living expenses) and replaced them with 'student loans'. In addition, they have introduced tuition fees for university students — a contribution of £1000 a year for each student. Students have never before had to make a contribution to their university tuition costs in Britain. There are a number of arguments in favour of this system.

- The government has only a limited amount of money available that can be spent on education. Priority should therefore, be for the education of children from the ages of 5 to 16 years since this is the critical period and benefits all children.

- The system will ensure equal opportunity for all young people, since those who cannot afford fees will not have to pay them back. The system has worked well for student loans without discouraging less well off students from applying and should work for tuition fees.

- In the first few years of the system, there has been an increase in the number of young people applying to universities suggesting that charging tuition fees had not put people off applying to university.

- University education is a fantastic opportunity to for any individual. It is therefore reasonable that students make a contribution towards the cost.

- Every student pays the same tuition fees and has the same potential access to the better teaching and facilities paid for by those fees.
Tony Blair’s government has swapped the university student maintenance grants (for accommodation, food, living expenses) and replaced them with ‘student loans’. In addition, they have introduced tuition fees for university students — a contribution of £1000 a year for each student. Students have never before had to make a contribution to their university tuition costs in Britain. There are a number of arguments in favour of this system.

- It seems that the Government would like to reduce the amount of money they contribute to university education. It is right that the priority should be on the education of children from the ages of 5 to 16 years since this is the period in education available to everyone.

- In the first few years of the tuition fee system, there has been only a small decrease in the number of young people applying to universities.

- University education is a bonus not a right. It is therefore reasonable to raise money for higher education by charging tuition fees.

- University education benefits most students. It seems reasonable that all students make a contribution to the cost.

- Since those who cannot afford tuition fees will be given an extended period in which to pay them back after graduation, it is hoped that unlike the student loans, less well off students may not be discouraged from applying to university due to tuition fees.
Tony Blair’s government has swapped the university student maintenance grants (for accommodation, food, living expenses) and replaced them with ‘student loans’. In addition, they have introduced tuition fees for university students — a contribution of £1000 a year for each student. Students have never before had to make a contribution to their university tuition costs in Britain. There are a number of arguments in favour of this system.

• It is the students themselves who will benefit directly from their university education — earning as much as 50% more on average than a non-graduate in later life. The payment of tuition fees is therefore an extremely worthwhile investment.

• The introduction of student fees has ended the funding crisis in universities and colleges.

• By paying fees, university students are gaining immediate benefit by way of a lower pupil staff ratio and better books and equipment and ultimately a superior quality of education.

• The government has confirmed that their scheme will raise the targeted £150 million by the year 2001 taking it up to the £2 billion target that universities need.

• It would be good if less people applied to university. Not everyone is suited to an academic degree and many young people find themselves spending three more years studying for little long-term gain when they could have been building careers and earning a salary.
Tony Blair’s government has swapped the university student maintenance grants (for accommodation, food, living expenses) and replaced them with ‘student loans’. In addition, they have introduced tuition fees for university students — a contribution of £1000 a year for each student. Students have never before had to make a contribution to their university tuition costs in Britain. There are a number of arguments in favour of this system.

- Graduates may benefit directly from their university education, earning around 15% more on average than a non-graduate in later life.

- By paying fees, students may help to reduce the shortage of teaching staff, books and equipment within the next 6 years.

- The introduction of student fees has partly acted to reduce what the universities refer to as a funding crisis and should improve the quality of university education.

- By the year 2010, the government has revealed that their scheme will help raise £150 million, which should go directly to improve the quality of university education.

- Tuition fees have discouraged some people from applying to university. This is not necessarily a bad thing as some young people find themselves spending three more years studying when they could be working and therefore making a contribution to society.
ARTICLE READABILITY

Please answer the following questions in the spaces provided by ticking the relevant box. There are no right or wrong answers; it is your opinion, which we are interested in.

1. From the text how old would you estimate the writer to be?
   □ Under 25 years
   □ 25 - 45 years
   □ Over 45 years
   □ It is impossible to tell

2. In your opinion, does the style of the text suggest it was written by:
   □ A male
   □ A female
   □ It is impossible to tell

3. Do you think the arguments for tuition fees are:
   □ Good quality
   □ Average
   □ Poor quality?

4. Which of the following do you think is the source of the article
   □ Newspaper
   □ Periodical
   □ Letter
   □ Radio transcript?
   □ It is impossible to tell

5. Is the text written by a native English speaker?
   □ Yes
   □ No
   □ It is impossible to tell

6. Do you think that the writing is grammatically correct?
   □ Yes
   □ No

7. Do you think the article was written by:
   □ A journalist
   □ A scientist
   □ A politician?
   □ It is impossible to tell
Using the scale below, please indicate the degree to which each value (listed in the left hand column of the table below) IS RELEVANT TO each of the four issues shown across the top of the page.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>ISSUES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRIVACY OF PUBLIC FIGURES</td>
</tr>
<tr>
<td>Broadminded</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Wisdom</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Justice</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Capable</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>World at Peace</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Intelligent</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Unity with Nature</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Protecting the Environment</td>
<td>0 1 2 3 4 5</td>
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<tr>
<td>Successful</td>
<td>0 1 2 3 4 5</td>
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<tr>
<td>Ambitious</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Wisdom</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>World of Beauty</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Self-Respect</td>
<td>0 1 2 3 4 5</td>
</tr>
</tbody>
</table>
HIGHER EDUCATION QUESTIONNAIRE

1. After 6th form, are you hoping to go to university?
   □ Yes
   □ No

   If no, please go to question 6.

2. If yes, which of the following is your preferred university location.
   □ North
   □ South
   □ Midlands
   □ Other

3. Which of these groups does the subject you intend to study fall into?
   □ Science
   □ Social Science
   □ Humanities
   □ Business Studies
   □ Law
   □ Languages
   □ Other

4. Are you intending to take a GAP year?
   □ Yes
   □ No

5. Do you envisage taking advantage of the student loans?
   □ Yes
   □ No

6. To what extent do you agree that students should pay university tuition fees?
   □ Strongly disagree
   □ Disagree
   □ Neither agree nor disagree
   □ Agree
   □ Strongly agree

7. To what extent do you agree or disagree that the current tuition fee of £1000 per year is acceptable?
   □ Strongly disagree
   □ Disagree
   □ Neither agree nor disagree
   □ Agree
   □ Strongly agree
8. To what extent do you agree or disagree that all students should pay tuition fees regardless of their financial circumstances?
   □ Strongly disagree
   □ Disagree
   □ Neither agree nor disagree
   □ Agree
   □ Strongly agree

9. Do you know, at this stage which career you intend to follow?
   □ Yes
   □ No

THANK-YOU
REFERENCES


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the persuasion context. In J.S. Uleman & J.A. Bargh (Eds), *Unintended thought*: 212-252. New
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DeBono, K.G. (1987). Investigating the social-adjustive and value-expressive functions of attitudes:
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Dovidio, J.F.; Evans, N. & Tyler, R.B. (1986). Racial stereotypes: The contents of their cognitive
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persuasion on environmental issues. In M. H. Bazerman; D. M. Messick.; A.E. Tenbrunsel.&
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attitude relevant information. Unpublished manuscript, Northwestern University 1995. Cited in
analysing reasons. In R.E. Petty & J.A. Krosnick (Eds), *Attitude strength: Antecedents and


Assessment, 9: 107-121.


THE END