

The Concept of Cash: An Empirical Study of Connotative Meaning in Accounting

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This experimental study investigates the connotative meaning of the concept “cash”, as it relates to the cash flow statement, held by the three key parties to the accounting communication process: preparers, auditors and users. Concerns raised in the accounting profession regarding the susceptibility of the cash flow statement to manipulation, coupled with the recent introduction of NZ IAS 7 (cash flow statement) provide the motivation for investigating the potential for miscommunication (either intentional or unintentional) between the main parties to the financial reporting process. The study investigates inter and intra group differences in measured connotative meaning of the old and new definitions of “cash”, and determines the effect of connotative meaning on decision outcomes. Further, the study considers the overall quality of the two definitions, as perceived by the three financial reporting groups.

Three key findings are indicated. The first is that the three financial reporting groups do not share the same cognitive structure in which the meaning of the concept “cash” is held. An important implication is that comparisons between the connotative meanings held by the three financial reporting groups cannot be validly made. Secondly, significant differences in the measured meaning were observed across the two definitions within each of the three subject groups. Thirdly, the decision outcomes for each of the three subject groups were significantly different under the two definitions. Also there was some evidence that the differences in the decision outcomes were linked to the differences in the measured connotative meaning.

These results raised several concerns regarding the potential for miscommunication between the three key parties to the accounting communication process and highlighted the importance of standard-setters assessing the effect on connotative meaning of possible changes in wording to key concepts within the cash flow statement.

Key Words: Cash, Cash Flow Statement, Cognitive Structure, Connotative Meaning, Creative Accounting, FRS 10, Measurement of Meaning, NZ IAS 7, Semantic Differential Technique.

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Chapter 1

Introduction

1.1 Background

The cash flow statement is as much an integral part of a company's financial statements as the traditional balance sheet and income statement. These three documents are so entwined that analysis of one without the others could only be described as improvident.

Over the past two decades preparers, auditors and users have come to accept the need for detailed cash flow information when assessing the overall financial performance of an entity (Epstein, 1992; Jones, Romano and Smynios, 1995; Yap, 1996; Jones and Ratnatuga, 1997; Jones, Sharma and Mock, 1998; Sharma and Iselin, 2003). Many advantages of cash flow information over traditional information found in the balance sheet and income statement have been documented in the literature (e.g., Neubert, 1959; Mason, 1961; Hicks and Hunt, 1980; and Lee, 1983 and 1992), including the belief that the statement is more *reliable* than information contained in traditional financial statements (Lee, 1981, 1984, 1992; Lee, Ingram and Howard, 1999; Jones and Ratnatuga; Jones et al., 1998 and Sharma and Iselin, 2003). However, empirical evidence to support this claim cannot be identified by the author of this study.¹

¹ A review of the top 20 Accounting and Finance Journals between 1985 and 2006 (as listed in table 4 of Low and Locke, 2004), as well as a general search on "JSTOR" and "ProQuest" from 1985 to 2006 under the search headings of "reliability" AND "Cash Flow Statement(s)" or "Statement of Cash Flow", did not provide any empirical research on the reliability of the cash flow statement.

The significance of these claims has been recently highlighted within the profession with such authors as Solomon (2002), Tergesen (2002) and Broome (2004) citing incidents where the cash flow statement has fallen victim to what is described as *creative accounting or aggressive reporting techniques* (Cuccia, Hackenbrack and Nelson, 1995, p. 227), therefore raising questions regarding the consequential reliability of this statement.²

Given the recent number of high profile corporate accounting scandals attributed to creative or aggressive reporting techniques (e.g., Adelphia, Dynegy, Enron, Qwest, Tyco, and WorldCom) many professionals are urging users of financial statements to take care when reviewing financial reports. This warning is clearly no longer restricted to the more traditional financial reports such as the balance sheet and income statement but has been extended to what has generally been accepted as the more trustworthy (often used synonymously with the concept of *reliable*) cash flow statement. Tergesen (2002) has gone so far as to suggest that the cash flow statement is now believed to be as vulnerable to manipulation as the calculation of net income itself, raising doubts about some of the current assumptions made by preparers, users, and, to some extent, auditors, when reviewing cash flow information. Accordingly, certain advantages of the cash flow statement noted in the past may indeed become weaknesses in the future, as users may place unwarranted trust in this financial report.

Much of the general literature addressing “reliability” of financial information centres on the concept of creative accounting, aggressive reporting and/or earnings management (Neill, Schaefer, Bahnson and Bradbury, 1991; Hood and Koberg, 1991; Jones et al. 1995). This body of work raises several points that are believed to contribute to companies representing their financial statements in a way that is not within the spirit of good reporting practices. Key factors contributing to such behaviour were identified by Shah (1996) and include: the culture of the firm, unrealistic market expectations and problems associated with poorly worded (or non

² The term “creative accounting” has been defined by Jameson (1988), (as cited in Chambers 1995) as follows: “Creative accounting...operates within the letter of both the law and of accounting standards but it is quite clearly against the spirit of it... It is essentially a process of using the rules, the flexibility provided by them and the omissions within them, to make financial statements look somewhat different from what was intended by the rule. It consists of rule-bending and loophole seeking.” (p. 20).

existent) accounting standards. A growing number of authors have extended the concept of *poorly worded* accounting standards to include a lack of definitional clarity surrounding key terms and concepts within the accounting discipline (e.g., Shah, 1996; Hronsky and Houghton, 2001). Hronsky and Houghton suggested that clearly-worded accounting standards “...reduce the justifiability of aggressive reporting decisions” (p. 124), therefore reducing conflicts between the many players in the communicative process.

This is not a new issue in accounting with such authors as Fitzgerald (1936) raising concerns about the apparent defects in accounting terminology in the early 1900’s. Fitzgerald identified four key issues which he believed contributed to the lack of effective communication within accounting. These included: a lack of uniformity in the way that accountants use similar or like words, the use of words and terms which is foreign to the accepted *connotative meaning* in every day speech, the use of several terms to express the same idea and a lack of “...precision in the use of language” (p. 133).³ Walters (1967) discussed the issue of miscommunication in accounting and believed that many of the issues surrounding this problem could be resolved if accountants took the time to define terms, used in accounting, more precisely.

It is the issue of definitional interpretation that is of interest to the current study; more specifically, issues surrounding the interpretation of a specific accounting concept, “*cash*”. The purpose of the current study is to measure the connotative meaning of the concept “cash”, as it relates to the cash flow statement, as interpreted by three key parties’ to the accounting communication process: preparers, auditors and users, defined under two different reporting standards. The first definition is provided under Financial Reporting Standard (FRS) 10, “Statement of Cash Flows”, and the second is the newer definition provided under the New Zealand Equivalent to International Accounting Standard (NZ IAS) 7, “Cash Flow Statements”.

³ Connotative meaning refers to an accumulation of emotional associations or the “affective” meaning of a particular concept suggested (Flamholtz and Cook, 1978; Adelberg and Farrelly, 1989). Osgood et al. (1957, p. 321) describes connotative meaning as the emotional or metaphorical meaning attached to a specific term or symbol. A more detailed discussion can be found in Chapter 2, Section 2.5.2.

At the time of this study both definitions were in use as different entities were reporting under one of the two available frameworks in place (the old New Zealand Generally Accepted Accounting Practice (GAAP) and the new New Zealand GAAP). Therefore entities in New Zealand are required to use one of the two definitions. This is important as the current study is assessing possible differences in the measured connotative meaning, in an experimental setting, between the three financial reporting groups and across the two definitions.

A further component to the study is the inclusion of a decision outcome analysis which assesses each subject's response to a series of cases, based on their allocated definition of "cash". This will allow the researcher to empirically test the relationship between the measured meaning and the decision outcomes resulting from those definitions. Lastly, the study taps subject's perception about the perceived *quality* of their allocated definition of "cash" which will provide information relevant to the wider issues of definition clarity and communication effectiveness.

1.2 Aims of the Research

Effective communication between the various parties to the reporting process is seen as the cornerstone of good financial accounting (Shah, 1996). The importance of consistency in meaning and understanding between the preparers to the many users of financial reports has been well supported in the literature (Bedford and Baladouni, 1962). At the heart of good communication in accounting is the need for the sender to convey the message to the receiver in such a way that both parties attribute the same meaning to that information. The provision of clear definitions assist in this process by providing a uniform basis from which all parties involved in the communication process can operate when dealing with the meaning associated with key terms and concepts. Shah (1996) argues that a lack of definitional clarity will create misunderstandings and possibly opportunities for creative or aggressive reporting practices.

Therefore, this study sets out to provide empirical evidence that differences in the connotative meaning of the key concept "cash", as it relates to the cash flow

statement, exist between the old and new definition (intragroup) and across three important financial reporting groups (intergroup). The study will also establish a link between measured meaning and the decisions made by the respective parties as a result of their definitional interpretation (decision outcomes). The final phase of this study will assess the overall “quality” of the definitions in question, as perceived by the various subject groups. This, in conjunction with future research into other cash flow related topics, will help advance the body of knowledge surrounding the understanding of, and about, the *reliability* of cash flow information.

The author builds on the work of Hronsky and Houghton (2001), who looked at the extent to which the perceived changes in the meaning of a defined term or concept, brought about through a change in relevant accounting standards, impacts on the measured (connotative) meaning and decision outcomes across the three financial reporting groups.

The specific aims of this study are summarised as follows:

- 1) To determine the extent to which the three financial reporting groups shared the same cognitive structure for the concept of “cash”, as it relates to the cash flow statement.⁴

A number of studies have established a relationship between the level of sophistication a subject has in a particular field of interest (discipline) and the cognitive structure in which meaning is believed to be held (e.g., Houghton and Hronsky, 1993). Accordingly, if a group of subjects share the same cognitive structure as another group then it is believed that they establish meaning within a similar framework.

⁴ Referred to by Osgood (1960) as “*cognitive consistency*” (p. 343). In a general sense, the term “cognitive structure” relates to the term *cognition*, which is derived from the Latin word, *cognoscere*, meaning “to know”. Cognition refers to the mental function and mental processes individuals undertake when determining meaning. This description applies to such processes as memory, attention, perception, action, problem solving and mental imagery and for this reason is fundamental in the measurement of meaning research (Osgood, 1960).

Looking at the subjects used in this study it could be assumed that they share a similar cognitive structure as they all have some professional interrelationship with financial statements and are often educated in some form of business discipline. However, whether the similarities are significant requires testing, as the effective transfer of meaning requires a shared cognitive structure to be observed (Osgood, Suci and Tannenbaum, 1957).

This study looks to establish whether the three financial reporting groups (identified as being key components to the financial reporting process) share the same (or have a sufficiently similar) cognitive structure in which meaning is believed to be held. This extends the existing research as no other study has used the concept of “cash” as the dependent variable, for the three groups identified when looking at the comparability of cognitive structures.

- 2) To establish empirically whether significant differences exist in the connotative meaning of the concept “cash”, as it relates to the cash flow statement, defined under FRS 10 and NZ IAS 7. While prior studies have focused on the measured meaning of a range of accounting terms, none have analysed different definitions of “cash”. This study extends prior research by examining the measured meaning of different definitions (in a New Zealand setting) of cash across the three reporting groups identified in this study.

Hronsky and Houghton (2001) recognised the use of several different parties to the reporting process as a potential avenue for future research when looking at changes to key accounting terms and concepts (p. 137). As their study looked only at auditors they suggested that future research could enrich this body of knowledge by including other key reporting parties, indicating that different economic incentives (represented by the different users) could impact on the decisions made by different subject groups.

Given the possibility for intentional or unintentional interpretation and/or representational differences in the meaning, and subsequently the calculation of what makes up “cash” in the cash flow statement, the *reliability* of the cash flow statement could become highly questionable. If different parties to the reporting environment ascribe different meanings to a symbol used in the communication process then the overall effectiveness of the report may be jeopardised (Haried, 1973).⁵ This is supported by Bedford and Baladouni (1962) who suggested that accountants are responsible for sending a message (regarding the financial position of the reporting entity) but in order for the message to be communicated effectively it is critical that the message sender and the message receiver are creating the same meaning.

- 3) To empirically assess the impact of changes in accounting terms and concepts resulting from New Zealand’s recent move to adopt International Financial Reporting Standards (IFRS) for certain reporting entities. The researcher believes that New Zealand’s move to IFRS in 2005 has resulted in subtle changes to many key accounting terms and concepts. Therefore a further aim of this study is to establish whether these subtle changes have resulted in different (connotative) meanings between and within the three financial reporting groups.

The introduction of a proposed definition of “true and fair view” by the National Companies and Securities Commission (NCSC) in 1984 motivated Houghton (1987a) to measure the possible implication to accounting meaning. Hronsky and Houghton (2001) undertook similar research after changes to the definition of “extraordinary items” was implemented in Australia. Mason and Gibbins (1991) had earlier suggested it useful to “...review new (and possibly existing) standards to reduce the apparently large number of ambiguities and other difficulties that detract from the thrust of the standard...” (p. 23).

⁵ Haried (1973) examined the extent to which certain terms used in the financial reports fail to convey to all users, or to particular groups of users, the meaning intended by the report. He felt that “...the semantic problem in communication is concerned with the precision with which symbols used in communication convey the desired meaning.” (p. 117).

By researching the meaning of the concept “cash” in FRS 10, and NZ IAS 7, a clearer understanding of possible reporting and interpretational differences may be established. This could have wide-reaching implications for preparers, auditors, users and standard setters as an indication of difference in meaning between and within the three subject groups and could indicate a resulting lack, or breakdown in, communication within the financial reporting process. Oliver (1974, p. 299) suggested that the greater the amount of communication between the parties the better the decision making will be and a greater rapport (between the parties) will be established.

This need for a greater level of communication between various parties to the reporting process has been well documented in the literature (e.g., Bagranoff, Houghton and Hronsky, 1994; Mason and Gibbins, 1991) and therefore is a key justification for the current study.

- 4) The final aim of this study is to further advance the measurement of meaning in accounting literature. Research in this area has been developed over several decades by such authors as Osgood et al. (1957); Haried (1972) and (1973); Oliver (1974); Flamholtz and Cook (1978); Mann (1984); Houghton (1987a, 1987b and 1988); Bagranoff (1990); Houghton and Hronsky (1993); Houghton and Messier (1991); Bagranoff et al. (1994); Hronsky and Houghton (2001) and most recently Wines (2006). Haried (1973) suggested that, to the extent semantic problems exist, accountants have the primary responsibility for reducing these problems in external accounting communication. Haried was concerned about the apparent lack of empirical support for proposals aimed at reducing or eliminating these problems.

Subsequent to Haried (1973) most studies focused primarily on the meanings attributed to key accounting concepts and terminology by various parties to the communication process (e.g., students, professionals and academics). The current study builds on this previous work and extends the understanding of what Hronsky and Houghton (2001, p. 123) call “the language game” in

accounting by measuring not only the meaning of the defined concept “cash” between preparers, auditors and users but also the measurement of intragroup meaning (within each subject group) resulting from the change to the definition of “cash”. This extension to intragroup connotative meaning is supported by prior research (Hronsky and Houghton, 2001).

The current study also extends the analysis to include the impact that meaning has on decision outcomes. The aim is to further develop the original hypothesis postulated by Hronsky and Houghton (2001), that variability in decision outcomes may be explained by variability in the meaning of the concept upon which decisions are based (p. 127).

The introduction of research question (6) dealing with the perceived *quality* of the definitions will provide additional evidence to support research in the area of cash flow reliability and creative accounting. This is the first study in the measurement of meaning in accounting to include an additional independent variable looking at a subjects’ overall perception of a specified definition.

The final extension to the existing literature relates to the administration of the semantic differential technique, in that a web-based experiment is conducted providing both the flexibility of a mail-out questionnaire and the experimental rigour of a controlled setting.⁶

The contribution made to the literature includes the provision of empirical evidence of the extent to which the connotative meaning for the concept “cash”, as it relates to the cash flow statement, is shared between the three financial reporting groups and the possible effect of the subtle changes made to the definition of “cash” brought about through the change to IFRS.

⁶ The semantic differential technique is quantitative a method used to measure the connotative meaning of terms, concepts, phrases and statements (Osgood, et al. 1957). See Chapter 2, Section 2.5.2 for further discussion.

A further contribution includes the extension of the research into the area of decision outcomes and their connection to the measurement of meaning, with any notable differences being evidence of changes in communication effectiveness.

1.3 Implications of the Study

Should the results indicate a difference in the measured meaning attributed to the concept “cash” between each financial reporting group, the ramifications could be far-reaching, from efficient capital allocations to the standard-setting process. Also, as definitional clarity of accounting terms and concepts is believed to be an important component in reducing creative or aggressive reporting practices, the results will provide an important contribution to the literature in this area of study. If differences are found to exist between the new and old definition of “cash”, the implication for standard setters is significant in that subtle changes could lead to changes in meaning (whether intended or not).

Both these outcomes form part of the wider research issue regarding the overall *reliability* of the cash flow statement and therefore may lead to the identification of future research questions.

1.4 Structure of the Thesis

The remainder of this thesis is structured as follows. Chapter 2 will provide an overview of key literature in the area of cash flow statement reliability and the measurement of meaning. This is followed by a review of the research questions in Chapter 3. Chapter 4 describes the research method employed in this study, specifically, the semantic differential technique used by Osgood et al. (1957) and subsequently refined by Haried (1972).

Chapter 5 will detail the results of the study followed by a discussion of those results and the identification of possible limitations of the study in Chapter 6. This is followed by Chapter 7 which provides a conclusion and discusses possible future research questions.

Chapter 2

A Review of the Literature

2.1 Introduction

The objective of this chapter is to review the existing literature surrounding the reliability of the cash flow statement, the influence of definitional interpretation and the possible issues surrounding the measurement of connotative meaning of the concept “cash”. The chapter initially provides a brief history of the lead up to the introduction of the cash flow statement followed by a consideration of the “reliability” of the information provided by that statement. It then reviews the definition of the concept “cash” as noted in the old New Zealand reporting standard, FRS 10 and the new reporting standard, NZ IAS 7 allowing a relationship to be established between the possible impact that the change in the definition of “cash” has on the meaning interpreted by the three financial reporting groups and the resulting reliability of the cash flow statement. Finally a review of the measurement of meaning literature provides some insight into the suitability of various research methods from which this area of study can be conducted.

2.2 Background

The cash flow statement in its current format is a relatively new addition to a financial reporting package. It has only been part of New Zealand’s GAAP since the introduction of Statements of Standard Accounting Practice (SSAP) 10, *Statement of Cash Flows*, in 1987. Prior to that date New Zealand entities were required to prepare a *Statement of Changes in Financial Position* under SSAP 10 (more commonly

referred to as a “fund statement”) which provided some, but not all, of the information now presented by the cash flow statement. This situation is not that dissimilar to other countries that operate in similar economic and political conditions (e.g., The United States of America (US), the United Kingdom (UK), Australia, and Canada) with most westernised countries introducing some form of fund statement by the early 1990’s.

Since the introduction of the cash flow statement to many countries’ GAAP, its usefulness to decision-makers has received significant attention in the literature (Epstein, 1992; Jones et al., 1995; Yap, 1996; Jones and Ratnatuga, 1997; Jones et al., 1998; and Sharma and Iselin, 2003). In addition, several key advantages of cash flow information over traditional information found in the balance sheet and income statement have also been well documented (Neubert, 1959; Mason, 1961; Hicks and Hunt, 1980; Lee, 1984, 1992; Sharma and Iselin, 2003), with the most frequently cited relating to the greater level of information content for decision-makers and increased *reliability* over traditional accrual-based accounts. The reasons documented for the second of these advantages include such factors as, a general lack of susceptibility to creative or aggressive accounting procedures, events and transactions being recorded based on their true economic impact and not simply their legal form and the clear establishment of representational and definitional criteria.

Of interest to this study is the significance of recent comments within the profession (e.g., Solomon, 2002; Tergesen, 2002; Broome, 2004) which raised questions about the reliability characteristic to which many preparers, auditors and users understand to exist. This relatively new interest in the cash flow statement’s vulnerability has shifted into mainstream practitioners’ journals largely due to the recent number of large corporate collapses (e.g., Dynegy, Enron and WorldCom) in which the cash flow statement itself was the subject of aggressive accounting practice (Broome, 2004).

Griffiths (1986) commented on the inability of regulatory systems to prevent aggressive accounting behaviour. However, there is the general belief that while

regulations can never be watertight, well-worded accounting standards help minimise the possibility of aggressive accounting, allowing for the presentation of more reliable financial information (Cuccia et al., 1995; Hronsky and Houghton, 2001). Cuccia et al. (1995) examined the effects that latitude inherent in accounting standard language had on the aggressive reporting behaviour of accountants. They concluded that changes to the wording of accounting standards could result in the possible minimisation of aggressive accounting but on the other hand, may also create opportunities for this type of behaviour should the changes not be well considered.

Mason and Gibbins (1991) discussed the general lack of research into the impact that accounting standards have on professional judgement, stating that "...a greater understanding of the interaction between judgement and accounting standards would have practical relevance and support the study of information preparation in such areas as disclosure, accounting materiality, positive accounting and accounting regulation." (p. 14). As a result, Mason and Gibbins recommended the review of new and existing standards to investigate possible ambiguities that may detract from the overall thrust of an accounting standard.

While authors such as Cuccia et al. (1995) investigated the possible benefits of replacing "...vague, verbal disclosure thresholds with a standard that employs a more stringent numerical threshold..." (p. 227) as a way to mitigate the aggressive reporting behaviour, others (e.g., Hronsky and Houghton 2001) believe that the true problem lies within the issue of definitional interpretation of key accounting terms, which in turn hinges on the participants' understanding of those terms.

Evidence that the meaning of accounting terms can influence decision-makers' understanding of those terms has raised yet another potential concern for preparers, auditors and users. This issue was considered by Griffiths (1986), Hronsky and Houghton (2001) and Wines (2006), who acknowledged the connections between changes in meaning, resulting from subtle changes in the definition of key wording, and the possible impact on the resulting decisions made by those different parties to the communication process. This issue is believed to contribute to the overall

reliability of financial statements as it is not always clear that the changes were intentional.

To better understand the definitional influences surrounding the cash flow statement a brief review of the history of this statement is required. This is addressed in the following section.

2.3 History of the Cash Flow Statement

2.3.1 Birth and death of the fund statement

Prior to the 1950's the term *cash flow* was seldom seen in the accounting literature. Most of the references to the flow or movements in cash were denoted by terms such as "net cash income", "net cash generation", "cash income", and "cash funds generated from operations", to name a few (Mason, 1961, p. 3). The introduction of the term *cash flow statement* was not widely seen until the late 1970's, although it was not until 1985 that the first country, Canada, replaced its "fund flow statement" with a close version of the modern day cash flow statement. In the past two decades many other countries and/or regulatory bodies (e.g., South Africa, US, UK, Australia, the International Accounting Standards Board (IASB) and New Zealand) followed in Canada's footsteps (Donleavy, 1992, p. 27).

The precursor to the cash flow statement was the fund statement (or as it was also known: funds flow statements, statement of source and application of funds, or statement of changes in financial position). This statement was first seen in the US in the early decades of the 1900's and by the 1950's US companies were experimenting with putting some form of fund statement in their annual reports (Wilson, 1989). It was believed to provide users of financial statements with additional information that allowed them to better assess the way in which operating profits translated into changes in working capital, or using the language proscribed by Heath (1978), determining "...what 'happened' to a company's profit ...?" (p. 96). This was reflected by the names assigned to this statement by some countries (e.g., Britain introduced the "Statement of Sources and Uses of Funds", Donleavy, 1992, p. 27).

By the early 1960's, the fund statement, or variations on the same fundamental theme, was widely accepted and became part of, or a supplement to, the financial statements in many countries (Henry, 1975). The importance of the statement was strongly supported by researchers such as Summers (1968), Pankoff and Virgil (1970) and Chandra (1974), who suggested it was a critical component to the financial reporting package. Nevertheless, there were those who did not fully endorse its inclusion as a major financial statement. Their reasons became more apparent as the fund statement became the subject of strong criticism in the late 1970's (see Henry, 1975 and Heath, 1978).

Irrespective of the opponents, the fund statement had already lined up beside the traditional balance sheet and income statement and became an integral supplement to company financial reports. A study by Anton (1954, p. 623) of 500 US and Canadian corporations showed that by 1954 33 percent of large companies already included some form of fund statement in their annual reporting package to shareholders, irrespective of the fact that it was not required by any reporting authority at that time. Over 10 years later the 19th annual edition of *Accounting Trends and Techniques* published by the American Institute of Certified Practicing Accountants (AICPA) showed that 65 percent of the 600 companies analysed used some form of fund statement (Anonymous, 1965). However, it was not until the issuance of Accounting Principles Board Opinion No. 19 in 1971 that it became mandatory disclosure (Henry, 1975, p. 56). Similar situations became noticeable in other countries, and/or by their respective governing bodies (e.g., Australia, Canada, New Zealand, and the IASB) (Donleavy, 1992).

While originally welcomed by many countries, it became apparent by the late 1970's that the fund statement was not going to be a permanent addition to the financial reports (or at least not in its current form). The two well documented problems noted by professionals and academics alike include: (1) the usefulness of the information and (2) the definition of the term "fund" and its consistency in application (Goldberg, 1951; Buzby and Falk, 1974; Henry, 1975; Heath, 1978; Clift, 1979; Chesley and

Scheiner, 1982; Graci, 1982; Vicknair, 1983; Lawson, 1981; Lee, 1984, and Vent, Cowling and Sevalstad, 1995).

Usefulness

In the early 1960's, a study conducted by the research division of the AICPA noted that while the original reaction to the fund statement had been favourable, there were increasing criticisms regarding the overall value of the statement to the financial reporting package. One such issue was raised by The Committee of the American Petroleum Institute and the Panel of the Financial Executive Institute which felt that the inclusion of a fund statement as a major financial statement was not necessary. In their opinion the fund statement was "...merely a supplementary interpretation of the balance sheet and income statement". They considered the fund statement was nothing more than "...a summary rearrangement of data already available in the other financial statements" (as cited in Anonymous, 1962. p. 63). This view was supported by Anderson's (1981) study of Australian institutional investors, suggesting that this user group valued the information content of the balance sheet and income statement three times more than the fund statement.

Graci (1982) and Vicknair (1983) surveyed American bank loan officers to establish whether the fund statement played any role in their decision to lend money. A majority of those surveyed felt that the fund statement had no incremental information content and did not influence their decision to provide loans. They felt the information needed for these decisions was already available in the more traditional financial statements: the balance sheet and income statement. Authors such as Lawson (1981) and Lee (1984b) had also noted similar results in the UK.

Definition of "Fund"

Mason (1961) studied the usefulness of the fund statement for many years. He felt that expanding the definition of the concept "fund" to encompass a concept which he called "all financial resources" (p. 54) would help resolve some of the conceptual problems of the statement. While Mason's "all financial resources" definition

described a statement that started to represent the cash flow statement as known today, it raised several issues regarding the problem of definitional interpretation when looking at the concept of “funds”. A similar issue was also documented by Vent et al. (1995) who argued that one of the main problems with the fund statement was linked to the fact that the meaning of the word “fund” had never been clarified. They suggested that this lack of definitional guidance had resulted in a wide diversity of practice in the preparation of the statement. Earlier, Rayman (1970), as cited in Heath (1978), suggested that the concept of “fund” ranged over a spectrum of liquidities, from *cash* at one extreme to *total resources* at the other, with terms such as *working capital* represented somewhere in-between. This was also supported by Buzby and Falk (1974), who commented on the lack of definitional clarity within the fund statement, leading to confusion and ambiguity regarding the nature, presentation and purpose of the fund statement.

Even prior to the introduction of the fund statement, some researchers (e.g., Goldberg, 1951) had anticipated problems surrounding the definition of the concept “fund”, recommending that the prevention of irregular application could only be achieved by restricting the definition to its strictest sense, i.e., “cash”.

After many years of debate, standard setters around the world began to replace the fund statement with the cash flow statement (e.g., Canada, the US, Australia and New Zealand) which was hoped to resolve many of the key issues raised regarding the problematic nature of the fund statement. The definitional concept of “fund” was therefore replaced by the concept of “cash” which was recognised as being clearer and less ambiguous (Buzby and Falk, 1974).

2.3.2 Introduction of the cash flow statement

The introduction of the cash flow statement in 1985 by Canada’s accounting regulatory body was seen as the first example in accounting history of the total replacement of one of the three main financial statements that make up the financial reporting package. By 1992, authorities responsible for standard-setting in New Zealand (SSAP 10 issued October 1987), the US (FAS 95 issued November 1987),

South Africa (AC 118 issued July 1988) the UK (FRS 1 issued September 1991) and the IASC (IAS 7 revised in 1992) issued pronouncements requiring most entities to publish a cash flow statement in their annual reports. The new financial report was believed to be clearer and more useful to decision-makers as the information contained within was more detailed, less ambiguous and more reliable than its predecessor, the fund statement.

Since the introduction of the cash flow statement a number of advocates have commented on the statement's overall importance to the financial reporting package (e.g., Lee, 1981b, 1986, 1992; Epstein, 1992; Jones et al., 1995; Yap, 1996; Jones and Ratnatuga, 1997; Jones et al., 1998; Sharma and Iselin, 2003). Three key reasons for these endorsements have been observed in the literature. The first is that rather than the cash flow statement being subject to accrual accounting, it is based on the physical transfers of cash. The second is that there is limited choice available to preparers in the statement's preparation, with the accounting standard prescribing the calculation process and presentational requirements of cash flow information. Therefore, the statement is subject to limited accounting choice and subjective judgement. The third is based on the statement's simplicity, understandability, and what Jones et al. (1998) described as "...objectivity and freedom from ambiguity" (p. 52). These endorsements can be summarised into the two categories of (a) decision usefulness and (b) reliability. As will be discussed, these categories are highly interrelated.

Decision usefulness

Libby (1975) suggested that the ultimate test of accounting information lies in its usefulness to individual decision-makers. This has been described in the literature as *decision usefulness* and is seen by many accounting regulators (e.g., Financial Accounting Standards Board (FASB); the Accounting Standards Review Board (ASRB); Australian Accounting Standards Board (AASB); IASB) as the primary criteria determining the *quality* of accounting information.

A significant number of studies in the past decade have provided evidence supporting the proposition that cash flow data provides users with information that helps better

assess the financial performance and position of an organisation (Jones et al., 1995). A detailed review and synthesis of many of these key studies was undertaken by Neill et al. (1991) who looked specifically at the usefulness of cash flow information between the 1960s and 1990s. Of interest to the current study is the connection between the underlying usefulness of the cash flow statement and its perceived objectivity. Objectivity may be seen as a prerequisite to reliability, and is recognised by Jones et al. (1998) as a key attribute of the cash flow statement, supporting its inclusion within the financial reporting package. According to Jones et al., information can only be useful when it can be relied upon by the users of that information, and given that the objective nature of the cash flow statement is a key consideration in increasing its reliability the resulting decision usefulness is also said to increase as a result. Therefore the important issue in determining the overall usefulness of cash flow information is to consider the underlying reliability of the cash flow statement. This is now considered.

Reliability

Many authors (e.g., Lee, 1981, 1984, 1992 and Lee et al., 1999; Jones and Ratnatuga, 1997; Jones et al., 1998; Sharma and Iselin, 2003), claim that the concept of reliability is one of the fundamental supporting advantages of the cash flow statement among key user groups (e.g., financial analysts, security managers, and bankers). The justification behind this suggestion is that cash flow information is believed to be relatively unaffected by accruals, deferrals and allocations and therefore tended to avoid the possibility of manipulation. Lee (1984) and Lawson (1981) argued that the inherent flexibility of the accrual accounting system provides the possibility for window dressing by management. This is supported by agency theory which helps explain the behaviour of management where remuneration systems are linked to organisational performance. Given the cash flow statements' high resistance to possible window dressing, market participants are more likely to recognise such information as being more representative of the underlying performance of the organisation, and therefore more reliable (Lee, 1984).

The concept of “reliability” is heavily entrenched in the creative or aggressive accounting and earnings management literature, and suggests a lack of bias and dependability from the users’ perspective (Sharma and Iselin, 2003). Lee (1981) suggested that cash flow information was more reliable, objective and comparable across entities than accrual information as it avoided dubious accounting allocations inherent in the accrual accounting system. Therefore it is relatively unsusceptible to what he and others (e.g., Lawson, 1981) called *subjective judgement*.

“Reliability” is noted in The New Zealand Framework (2005, Para. 24) as being one of the four key attributes that make information provided in financial statements “useful to users” (p. 20). Paragraph 31 states that the information contained within the financial statements will be reliable when it is “...free from material error and bias and can be depended upon by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent.” (p. 21).

One of the key concepts noted in Paragraphs 33 and 34 of the New Zealand Framework is the concept of “faithful representation”. For items, events or transactions to be faithfully represented in the financial statements they must be presented in a way that best represents how they should be portrayed. To achieve this, items, events or transactions must be represented so that they convey the message that best corresponds to the true underlying reality of what has taken place. This is extended to include the concept of “substance over form” where information in the financial statements should represent the true economic substance of the event or transaction as opposed to its simple legal form (Para. 34 and 35).

Lee (1992) considered this connection, recognising that cash flow information “...represents the observable effects of economic transactions, and can therefore be said to be a statement entirely of economic substance and free of legal form.” (p. 36). Lee suggested that the statement is more reliable as it represents the recording of the true nature of a transaction and not simply the form noted in law or under the subjectivity of accrual accounting.

As considered above, the concept of economic substance over legal form is not new to New Zealand and is also specifically noted in a number of other financial reporting frameworks (e.g., those produced by Australia, UK and IASB). It was believed to be one of the key considerations of many standard setters when looking at the implementation of a cash flow standard e.g., the Accounting Standards Board's (ASB) FRS 1, Cash Flow Statement, in the UK and the IASB in the introduction of IAS 7, Cash Flow Statement). Given the relatively limited amount of subjective judgement required in the preparation of the cash flow statement this financial statement seems to provide users with a more reliable source of information as preparers are less able to influence the represented results through inherent bias or connotative influence resulting from the application of judgement. However, while it would appear that leading cash flow researchers have found the cash flow statement to be more reliable than traditional financial statements, there appears to be limited empirical evidence provided by these authors to support such a claim. While studies by authors such as Lee et al. (1999) and Rosner (2003) found the relationship between earnings and operating cash flows could be used to indicate financial statement fraud, they did not go so far as to consider the possible manipulation of the cash flow statement itself.

One of the main advantages noted in the literature of the cash flow statement over traditional financial statements is its relative consistency in calculation and presentation (a lack of accounting choice). Therefore it is believed that auditors and other users can place greater reliance on the information as it is not as susceptible to subjective judgement by the preparer (Lee et al., 1999). However, in a New Zealand setting the old FRS 10 and new NZ IAS 7 financial reporting standards appear to provide several accounting choices in both the areas of preparation and disclosure. Most relate to the disclosure of such items as interest,⁷ dividends, taxation⁸ and non cash transactions. Others, however, relate to the underlying decisions made by the preparer when classifying and defining items, transactions and events.

⁷ For example, Sanford Limited's 1991 Consolidated Statement of Cash flows. Interest received and paid is disclosed under "Cash Flow from Financing Activities" as opposed to the traditional disclosure as "Cash Flow from Operating Activities".

⁸ For example, see The Canterbury Roller Flour Mills Company Limited's 1992 Statement of Cash Flows. "Taxation paid" is disclosed under "Cash Flow from Investing Operations" as opposed to the traditional disclosure as "Cash Flow for Operating Activities".

While these issues are important in the wider topic of cash flow statement reliability, they are outside the scope of this study and will not be considered further. The area of concern for this author is based on the possible problems associated with the interpretation and application of some of the more common terms and concepts used in the cash flow statement itself. More specifically, given the identified advantages of cash flow information, the author believes that the definition of the concept “cash” warrants further investigation.

This is also supported when looking at the eventual demise of the fund statement in that it was the definition of “funds” itself that was partly responsible for the loss in confidence by preparers and users of that statement. Given that the cash flow statement is established specifically for the purpose of presenting the inward and outward flows of cash, a clear understanding of that concept is important, within and across all parties to the communication process.

2.4 Definitions

2.4.1 General

Walters (1967) argued that many of the problems of accounting theory could be “...dissolved if only we took the trouble to define our terms more precisely” (p. 198). Fisher (1965) believed a good definition was one which conforms to two tests. The first is that it must be “...useful for scientific analysis” while the second is that it must “...harmonize with popular and instinctive reasoning”, (common sense) (p. 103). The literature, although still very controversial, tends to place accounting more in the art than the science category, therefore supporting the appropriateness of the second test for accounting definitions (Peloubet, 1945; Grady, 1948; Nelson, 1949). However, given the large body of literature covering the importance of connotative vs. denotative meaning in accounting communication, it may be that a literal interpretation is not appropriate either (see Section 2.5.2). A consideration of the definition(s) of “cash” is therefore required to help gain some understanding about the scope in which they currently operate. If the definitions appear concise and exact then agreement between various parties to the reporting process may be better facilitated.

This could also reduce the variability in the meaning of the concept, increasing the overall objectivity.

Also, the move to NZ IAS 7 needs to be considered as the wording under the new standard for the definition of the concept “cash” contains subtle differences from that recorded under FRS 10. Accordingly, a review of the two definitions of the concept “cash” will now be undertaken.

2.4.2 Definition of Cash

Houghton and Hronsky (1993) argued that the primary reason why definitions are produced is the desire to establish a widely agreed understanding of a concept by interested parties. A lack of agreement is therefore likely to be dysfunctional and of concern to preparers, auditors and users of that information.

At the core of the cash flow statement is the concept of “cash”. Under the old New Zealand GAAP, FRS 10 defines cash as:

“...coins, notes, demand deposits and other highly liquid investments in which an entity invests as part of its day to day cash management.” (Para. 4.1).

“...borrowings from financial institutions such as bank overdrafts, where such borrowings are at call and are used as part of day-to-day cash management.” (Para. 4.1).

While the term “cash” quite clearly includes currencies as would be described in a normal sense (i.e., coins, notes and demand deposits), it also introduces the concept of “*highly liquid investments*”. In NZ IAS 7, “cash” consists of both “cash” and “cash equivalents”. Therefore NZ IAS 7 defines “cash” as:

“...cash on hand and demand deposits.” (Para. 6).

“Cash equivalents” is defined as:

“...short term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in value.” (Para. 6).

On reviewing the two definitions several notable differences can be observed, including a lack of reference to on-call borrowings and the addition of the definition of “cash equivalents” under NZ IAS 7. While FRS 10 makes reference to the concept of “highly liquid investments” NZ IAS 7 provides further information by way of reference to the way in which the investments are convertible to “cash”. This clearly represents a change in the definition of “cash” from FRS 10 to NZ IAS 7, with NZ IAS 7 increasing the level of detail pertaining to highly liquid investments. However, whether there is sufficient information to ensure consistency of application of the definition of “cash” across all user groups requires investigation. Also, the inclusion of the concept of “cash equivalents” may increase the subjectivity of decisions made regarding what is included within the cash flow statement as an item of “cash”.

A similar issue was considered in 1995 by the ASB in the UK after many preparers felt that the definitions of *cash equivalents* in FRS 1, Cash Flow Statement, did not reflect the way in which businesses were managed. Accordingly, Financial Reporting Exposure Draft (FRED) 10 was issued in December 1995 proposing that the term “cash equivalents” be dropped from the definition of “cash” and that “cash” is defined so that it only included cash on hand and deposits repayable on demand, less overdrafts (Crichton, 1996). This approach was widely accepted resulting in a revision of FRS 1 in 1996. The final definition of “cash” was restricted to:

“...cash in hand and deposits repayable on demand with any qualifying financial institution, less overdrafts from any qualifying financial institution repayable on demand” (as cited in Megan, 1997, p. 66).

As in New Zealand, the standard setters in the UK had not included the concept “cash equivalents” as part of the core definition of “cash”, however, like New Zealand the ASB have moved to IFRS which does introduce the concept of “cash equivalents”. In New Zealand the ASRB moved from a cash flow standard that included the definition of “cash” only (FRS 10) to NZ IAS 7 which includes the definition of “cash” and “cash equivalents” within the definition of “cash” (for the purpose of the cash flow statement). Therefore over time we may observe an even greater variability in interpretation surfacing as companies enter the compulsory adoption of NZ IAS.⁹ There is also an added concern in that an early adoption period is allowed under NZ GAAP, potentially resulting in a combination of different definitional approaches (some under FRS 10 and others under NZ IAS 10). This could lead to even greater confusion between the many parties to the financial reporting process and further frustrate the communication in accounting process.

As noted earlier, definitional confusion regarding the fund statement (i.e., the lack of definitional clarity surrounding the concept “fund”) was a key criticism by both accounting academics and professionals (Vent et al., 1995) and may be a representative of the potential problems with definitions associated with the cash flow statement. Given the concerns raised by such authors as Solomon (2002) and Tergesen (2002) regarding the susceptibility of the modern cash flow statement to creative or aggressive accounting treatments, we could see a repeat of those issues that lead to the eventual removal of the fund statement from the financial reporting package.

In order to identify if possible definitional problems exist within the cash flow statement, it is important to measure the meanings of those terms and concepts that are most important to that statement. Given the issues raised in the literature surrounding the definition of “fund”, an analysis of the concept “cash”, as it relates to the cash flow statement is recognised as being important in the current study. As effective communication in accounting requires all parties to the communication

⁹ New Zealand companies reporting under New Zealand GAAP were required to convert to IFRS for accounting periods commencing 1 January 2007. A provisional period from 1 January 2005 allowed companies to early adopt.

process to hold and interpret accounting terms and concepts within a similar meaning, an analysis across a range of relevant subject groups may provide information of interest when assessing possible impacts of the change in the definition of “cash”. Also, the introduction of NZ IAS 7 has created a further need to investigate possible implications of the meaning(s) assigned to the concept of “cash” within and between the differing subject groups as it would appear that the new definition is different from the old definition and may lead to differences within and across the different communication groups.

2.5 Measurement of Meaning

The aim of this section is to review the literature relating to the measurement of meaning in accounting and establish a suitable measurement technique to apply to the current study. It will initially consider the qualitative and quantitative literature in order to determine the applicability of a quantitative approach to the research questions established in Chapter 3. This is followed by an analysis of the semantic differential technique, reviewing both the process involved and considering its validity for use in the current study. Finally, a review of the key literature surrounding the measurement of meaning in accounting will be considered, looking at different studies undertaken in this area of research and considering the implications of that body of work to the current study.

2.5.1 Background

One of the most well published methods of measuring meaning is the semantic differential technique, first developed by Osgood and Suci (1955), and later refined by Osgood et al. (1957). Osgood and Suci’s research in the past 50 years focused, in some form, on the study of language (e.g., Osgood, 1941, 1952 and 1964; Jenkins, Russell and Suci, 1958; Suci, 1967; Robertson and Suci, 1980). In the early 1950’s Osgood, Suci and Tannenbaum embarked on research concentrating on the development of an *objective quantitative measurement technique* applicable to the measurement of meaning. At that stage, much of Osgood’s earlier research was in the area of experimental psychology (see Osgood, 1941 and 1952), particularly the study of higher mental processing (language).

The development of the semantic differential technique (also referred to as semantic differential method) was the result of much of this prior work, producing a quantitative measurement technique that is well accepted across a wide range of disciplines and time (e.g., psychology, sociology, anthropology, political science, medicine, music theory, education, management, engineering and accounting – from 1956 to 2006).¹⁰ A number of the most recent of these studies are published in high ranking social science journals (e.g., Xiong, Logan and Franks, 2006; Malone, 2004; Nekolaichuk, Jevne and Maguire, 1999) helping to support their academic rigour.¹¹

Earlier, Carroll (1959) and Kahneman (1963) had criticised the use of the semantic differential technique as a measurement method, questioning whether meaning can be quantified using semantic differential scales, and to what extent *connotative* meaning is important in the process of meaning and understanding. Osgood et al. (1957) anticipated these concerns, stating that “...in our work on what we have been calling ‘meaning’, we have mapped only a small region of this complex set of correlations” (p. 321). Osgood et al. narrowly defined meaning as that which explains the way in which differences occur between the sender and receiver of information. While the

¹⁰ Xiong, M. J., Logan, G. D. and Franks, J. J., 2006, Testing the semantic differential as a model of task processes with the implicit association test, *Memory & Cognition*, Vol. 34, No. 17, pp. 1452-1463; Noland, V. J., Daley, E. M., Drolet, J. C., Fetro, J. V., McCormack Brown, K. R., Hassell, C. D. and McDermott, R. J., 2004, Connotative interpretations of sexuality-related terms, *Sex Roles*, Vol. 51, No. 9/10, pp. 523-534; Pierce, W. D., Sydie, R. A. and Stratkotter, R., 2003, Social concepts and judgments: A semantic differential analysis of the concepts feminist, man and woman, *Psychology of Women Quarterly*, Vol. 27, pp. 338-346; Hsu, S. H., Chuang, M. C. and Chang, C. C., May 2000, A semantic differential study of designers’ and users’ product form perception, *International Journal of Industrial Ergonomics*, Vol. 25, Iss. 4, pp. 375-391; Nekolaichuk, C. L., Jevne, R. F. and Maguire, T. O., 1999, Structuring the meaning of hope in health and illness, *Social Science & Medicine*, Vol. 48, pp. 591-605; Leunes, A., Bourgeois, A. and Grajales, R., 1996, The effects of two types of exposure on attitudes toward aspects of juvenile delinquency, *The Journal of Social Psychology*, Vol. 136, No. 6, pp. 699-708; Michel, G. J., Autumn 1991, School politics and conflict in racially isolated schools, *The Journal of Negro Education*, Vol. 60, No. 4, pp. 502-511; Hardiman, G. W. and Zernich, T., Winter 1984, Subjective responses to paintings as originals, coloured slides, and coloured Prints, *Studies in Art Education*, Vol. 25, No. 2, pp. 104-108; DeCoster, D. and Prater, G., Jan 1973, An experimental study of the use of a business game in elementary accounting, *The Accounting Review*, Vol. 48, No. 1, pp. 137-142; Leduc, L., Jan 1976, Semantic differential measure of British party images, *British Journal of Political Science*, Vol. 6, No. 1, pp. 115-123; Hay, R. D., June 1969, Use of modified semantic differential to evaluate formal organizational structure, *The Academy of Management Journal*, Vol. 12, No. 2, pp. 247-257; Osgood, C. E., June 1964, Semantic differential technique in the comparative study of cultures, *American Anthropologist*, Vol. 66, No. 3, pp. 171-200; Jenkins, J. J., Russell, W. A. and Suci, G. J., Dec 1958, An atlas of semantic profiles for 360 words, *The American Journal of Psychology*, Vol. 71, No. 4, pp. 688-699.

¹¹ As defined by: Journal Summary List, Journal Citation Reports, 2005, *JCR Web of Science Edition*, Ranking based on Immediacy Index.

quantification of meaning will always be controversial, Osgood et al. argued that connotative meaning is responsible for influencing “individual behaviour” (p. 321) and therefore had a greater influence on interpreted meaning. Adelberg and Farrelly (1989) supported Osgood et al.’s work stating that connotative meaning drives decision making and therefore significantly affects communication between a sender and a receiver.

Other quantitative methods for measuring meaning have been identified in the literature (e.g., Haried’s, 1973, use of the antecedent-consequent method which is a study of controlled word associations), however none have been as widely accepted or vigorously tested as the semantic differential technique. Most of the concerns regarding the many alternative methods centre on the fact that they either focus on denotative meaning or fail to provide consistent confirmatory results (e.g., see Haried, 1973, and Adelberg and Farrelly, 1989).¹²

Disciplines within social science have established a large body of research in the area of measured meaning (e.g., linguistics, philosophy, psychology, sociology and anthropology) which is linked to such fields as semantics, semiotics and syntactic meaning. However, it is predominantly qualitative in nature and therefore lacks the same level of generalisability as Osgood et al. (1957) semantic differential technique.

Accordingly, it is the author’s belief that the validation of Osgood et al.’s (1957) semantic differential technique has been supported in the literature and provides the most appropriate method for use in the current study. Therefore, a review of the relevant literature in the area of the semantic differential technique will now be undertaken.

2.5.2 The semantic differential technique

The semantic differential technique is essentially a combination of controlled association and scaling procedures which are used to identify and measure a subject’s

¹² Denotative meaning is defined as the literal or denoted meaning. A further discussion can be found in later in this section.

connotative meaning of a term or concept by using a process of *semantic differentiation*. Here a subject is presented with a term or concept to be differentiated against a set of bipolar adjective scales (e.g., good-bad, measurable-unmeasurable, safe-risky, etc.). This process involved subjects checking-off, on a set of seven gradient scales, the gradient they felt most indicative of a given stimulus term or concept, effectively *differentiating* the meaning of that concept within that defined space (see example in Figure 2.1).

Figure 2.1

Example of bipolar semantic scales from Osgood et al. (1957), (p. 26)

FATHER												
happy	___	:	___	:	X	:	___	:	___	:	___	sad
hard	___	:	X	:	___	:	___	:	___	:	___	soft
slow	___	:	___	:	___	:	X	:	___	:	___	fast, etc.,

This process allows for the identification of the subject's connotative meaning of a specific term or concept by locating their perceived meaning as a point in "semantic space". Osgood et al. (1957) defined *semantic space* as:

"...a region of some unknown dimensionality and Euclidian in character. Each semantic scale...is assumed to represent a straight line function that passes through the origin of this space, and a sample of such scales then represents a multidimensional space." (p. 25).

Osgood et al.'s (1957) technique requires subjects to locate the meaning of a term or concept within this multidimensional semantic space. This defines what is commonly referred to in the literature as a subjects' "cognitive structure" (McNamara and Moores, 1982).

The semantic scales measure both the *direction* and *distance* from the origin point. By a subject judging a stimulus term or concept against the seven point-scales, the researcher is able to see how that subject localizes each judgement in that semantic space. The larger the number and the more representative the selection on the scale, the more representative is that point of the meaning of the term or concept being judged.

By attaching a numerical marker to each point on the semantic scale (i.e., 1 to 7) the dimensions (referred to in the current study as “factors”) can be further reduced. Factor analysis is the statistical method employed to establish these factors allowing for any relationships (commonalities) between the scales to be identified and defined mathematically. The researcher can then intuitively label these factors, creating the specific dimensions of meaning for the stimulus term or concept under examination (Haried, 1972 and 1973; Flamholtz and Cook, 1978). By grouping those scales that are believed to be similar the researcher can create what Osgood et al. (1957) defined as the exhaustive dimensionality of space.

Provided the scales are sensitive to the term or concept under examination, the semantic differential technique can be used to test both differences in interpretative meaning between different parties, and the degree to which different terms or concepts intended to convey the same meaning, actually do (Osgood et al., 1957).

Semantic scale development and resulting factors

A key component to the effectiveness of the semantic differential technique is the selection of the semantic scales (Bagranoff, 1990). To define the scales relevant to the measurement of meaning, various researchers applied factor analysis to a significant range of descriptive bipolar adjectives, stimulus terms and concepts and subjects. Arguably the most important of these studies was undertaken by Osgood et al. (1957), involving the use of 50 bipolar scales, testing 20 concepts over 100 subjects. The scales were a random sample drawn from Roget’s Thesaurus, while the concepts were chosen on the basis that they were not based on the selected scales, as

diversified in meaning as possible, and familiar to the subjects used in the study (p. 34).

After a “matrix of intercorrelations” (Osgood et al., 1957, p. 35) was factored the study provided a domain of meaning from which three major factors emerged. These were labelled as: *Evaluative*, represented by scale items such as good-bad, important-unimportant; *Potency*, represented by scale items such as hard-soft, strong-weak; and *Activity*, made up of scale items such as active-passive, fast-slow (described as EPA), all of which have been validated in a large number of subsequent studies (e.g., Osgood, 1964).¹³

The conclusion reached by Osgood et al. (1957) was that, for most terms and concepts, the reliable measurement of connotative meaning could be explained within the three (EPA) factor structure identified in their study. As these factors represent the axes within the semantic space where meaning is believed to exist, a subject’s meaning of a specific term or concept can be identified within that semantic space.

Concerns regarding the three (EPA) factor structure have been raised in the literature (e.g., Green and Goldfried, 1965; Komorita and Bass, 1967; Heise, 1969) with several studies failing to conform to Osgood et al.’s (1957) structure. While Heise concluded that the results did not suggest the invalidity of the three (EPA) factor structure, it could indicate that “...the dimensionality of the semantic space can vary as a function of the individuals who are employed as subjects” (p. 414).

Heise (1969) undertook a review of the literature surrounding the validity of the semantic differential technique and suggested that a “crude estimation” (p. 412) of the reasons for differences in results could be divided up as follows:

“...one-tenth due to subject-scale interaction, that is, due to differences between subjects in the use of scales, one-quarter due to bias and/or deviations of subjects’ true scores from the population true scores, one-quarter due to momentary

¹³ A matrix of intercorrelation is a table showing the intercorrelations among all variables (Hair, Anderson, Tatham, and Black, 1998).

deviations of subjects from their own true scores and two-fifths due to random error.” (p. 412).

The most controllable of these is the subject-scale interaction, which, in simple terms, means the problems associated with the scales not being representative for the subject and/or concepts under examination. As each subject’s response is partly driven from their personal field of interest it could be assumed that this also has a part to play in the overall validity of Osgood et al.’s (1959) three (EPA) factor structure. As the three (EPA) factor structure was established using a total of 50 scales, Osgood et al. (1957) recommended that researchers tailor the semantic differential technique by selecting those scales that are most relevant to their particular field of study. Osgood et al. also commented on the applicability of the EPA structure to all studies, stating that:

“...the three dominant factors that we have isolated do not exhaust semantic space, and therefore dimensions highly significant for differentiating the concepts in a particular study might be lost entirely if one stuck to only evaluative, potency and activity scales.” (p. 79).

This issue has been confirmed in a number of studies where the particular field of interest is narrowly defined and therefore the resulting factors have differed from those established by Osgood et al. (1957) (e.g., Wines, 2006). Therefore the effective use of the semantic differential technique in the current study requires the application of those scales that are more relevant to the domain of accounting.

Semantic scales relevant to accounting

Some of the earliest research in the area of measured meaning in accounting was conducted by Haried (1972). He felt that while such researchers as Goldberg (1965) had identified communication issues as one of the key axial problems in accounting, no empirical research into the problem itself had been conducted. In response, Haried undertook a study into what he called the “semantic problems in accounting

communication” (p. 376), looking at the proximity (or differences) in meaning between that intended by the sender (e.g., the meaning of the term depreciation as represented by the accountant) and that interpreted by the receivers (e.g., the meaning of the term depreciation as represented by a banker or investor).

Haried (1972) built on Osgood et al.’s (1957) work, with the objective of adapting Osgood’s et al. semantic differential technique to test, measure and analyse connotative meanings associated with terminology used specifically in the financial reporting domain. Haried was concerned that Osgood et al. utilised scales (and therefore established factors) that were representative of a larger, and more general, domain of meaning and the application to more specific domains could be questioned. While in principle he agreed with Osgood et al. that the semantic differential technique could be adapted to most disciplines he questioned its overall relevance to the specific and specialised field of accounting.

There has been significant debate in the literature regarding the relevance of research conducted in fields such as psychology, sociology and economics to the accounting discipline. Jensen (1970) supported this view, arguing that it is inappropriate to support accounting hypotheses with empirical evidence gathered from behavioural findings, suggesting that extreme caution should be taken when undertaking such transformations as they are not easily generalised to other settings. He appeared critical of accounting in this respect stating that:

“[a]ccounting research frequently has its tentacles extended into the research efforts of scientists in the fields of psychology, sociology, economic, statistics, operations research, management science etc. In so doing, accountants are looking to others for answers in order to avoid the dirty and painstakingly slow, expensive, and methodical means by which empirical evidence can be conceived and nurtured in their own studies. But this outside empirical evidence often flounders like a fish out of water when plucked from the environment in which it was generated.” (p. 508).

Haried (1972), in part, accepted the problematic nature of adopting Osgood et al.'s (1957) psychology derived method, acknowledging two key problems when trying to apply the semantic differential technique to accounting terms and concepts. The first was the identification of relevant bipolar adjectives (semantic scales) that represent the semantic space within which accounting meaning is held, and the second, the identification of independent dimensions of semantic space to which the scales relate (the factor labels). In addressing the first of these issues (the semantic scales) Haried (1972, p. 380) applied a technique known as the "triad procedure" to help identify a range of bipolar adjectives to produce a more relevant semantic differential scale for use in accounting. The triad procedure was earlier accepted by Triandis and Kilty (1968) as a useful tool for generating bipolar scales relevant in the determination of meaning.

Haried (1972) describes the triad procedure as follows:

"Triads, sets of three stimulus terms, are presented to subjects who are asked to perform the following tasks:

1. Decide which of the three concepts is most different than the other two.
2. Decide what the characteristic(s) is of the one concept that makes it different.
3. Complete a sentence using the term, bearing in mind one or more of the characteristics identified in step (2) above...
4. Write down the logical opposite to the word used to complete the above sentence." (pp. 380-381).

Using a list of 42 concepts (three accounting concepts per set x 14 triads) commonly used in financial reports (e.g., cost, expenses and loss; asset, equity and liability; goodwill, inventory and plant and equipment, etc.) a random selection of 197 possible combinations were developed, three per time. The triad procedure was applied to 65 subjects (54 students and 11 practising accountants) and generated 76 pairs of bipolar

adjectives. Scales which exhibited six or more responses across three or more triads were chosen resulting in 30 scales. A further three scales, representing the dimensions of general semantic space, were added as control variables in order to relate the results back to Osgood et al.'s (1957) study (one from each of the EPA structure) resulting in the development of 33 bipolar scales .

The research instrument was then administered to 92 subjects, half “sophisticated” (represented by 18 practising accountants and 28 business administration students), and half “unsophisticated”, (consisting of 16 investment club members and 30 non-business administration students) (Houghton, 1988). Eighteen concepts generally found in a set of financial statements were selected (e.g., goodwill, reserve of doubtful accounts receivable, net income) representing what Haried (1972) described as “...reasonably representative of the semantic domain of interest” (p. 384). Both the scales and the concepts were randomised then applied consistently across all subjects. The application of principal factor analysis, with varimax rotation, resulted in the identification of *seven* factors, labelled: objectivity, evaluation, control, activity, time, stability and necessity (Haried, p. 388). Haried concluded that the *seven* factor structure identified would be “...more sensitive in differentiating meaning associated by various groups with terms used in financial reports than the three-factor procedure designed by Osgood for the general domain of meaning.” (p. 389), (see Figure 2.2 below for the results of Haried’s, 1972, p. 388, factor analysis).

Figure 2.2

Factor analysis results from Haried (1972)

TABLE 6
Varimax Rotation of Principal Factor Analysis

Scales	Factors							
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u>	<u>R²</u>
I. Objectivity								
1. Exact—estimated	.71	.19	.15	.11	.06	.05	-.05	.58
2. Measurable—unmeasurable	.69	.13	.24	.05	-.04	.05	.06	.57
3. Tangible—intangible	.66	.22	.05	.14	-.01	.09	.20	.55
4. Real—imaginary	.63	.14	.11	.09	.13	.14	.27	.53
5. Objective—subjective	.62	.20	.14	.22	.09	.06	-.02	.50
6. Direct—indirect	.53	.21	.09	.15	.07	.02	.26	.43
7. Complete—incomplete	.52	.27	.22	.15	.18	.11	.06	.47
8. Informative—misleading	.45	.25	.22	.25	.18	.14	.24	.48
9. General—specific	-.44	.01	.03	.00	.00	.20	-.01	.24
II. Evaluation								
10. Good—bad	.17	.80	.12	.14	.16	.15	.15	.78
11. Beneficial—adverse	.15	.78	.22	.23	.17	.11	.08	.79
12. Safe—risky	.23	.55	.17	-.01	.15	.00	.12	.42
13. Strong—weak	.23	.50	.22	.26	.13	.01	.14	.47
14. Available—unavailable	.25	.44	.07	.23	.09	.07	.09	.38
III. Control								
15. Planned—unplanned	.15	.23	.69	.07	.20	.07	.09	.62
16. Expected—unexpected	.14	.19	.67	.15	.25	.10	.35	.73
17. Controllable—uncontrollable	.25	.24	.65	.03	.11	.16	-.03	.60
IV. Activity								
18. Active—passive	.25	.24	.12	.72	.10	.12	.14	.70
19. Dynamic—static	.19	.21	.14	.57	-.08	.20	.16	.50
V. Time								
20. Long-term—short-term	.02	.19	.17	.00	.79	.09	.00	.70
21. Permanent—temporary	.02	.15	.10	.00	.54	-.25	.05	.39
22. Cumulative—noncumulative	.03	.17	.12	.05	.36	.03	.07	.19
VI. Stability								
23. Flexible—inflexible	.03	.22	.14	.05	.09	.23	.06	.26
24. Variable—constant	.00	.02	.06	.12	-.08	.56	.03	.34
VII. Necessity								
25. Necessary—unnecessary	.22	.36	.21	.15	.06	.11	.64	.67
26. Required—discretionary	.17	.25	.10	.26	.18	-.03	.53	.48
Unassigned								
27. Committed—uncommitted	.20	-.09	.27	.08	.15	-.11	.19	.24
28. Current—past	.23	.14	.16	.14	-.22	.04	.21	.24
29. Productive—unproductive	.23	.45	.05	.43	.10	-.02	.16	.49
30. Immediate—remote	.39	.15	.18	.29	-.04	.02	.24	.35
31. Certain—uncertain	.33	.05	.42	.08	.34	-.10	.19	.49
32. Common—uncommon	.19	.25	.46	.19	.10	.18	.33	.50
33. Costly—inexpensive	.20	-.11	.15	.07	.25	.16	.20	.21
Percent common variance	25.6	19.6	14.7	10.5	10.1	9.8	9.3	

To test the validity of the newly developed seven factor structure, Haried (1973) undertook a further study to measure the meaning of the term “generally accepted accounting principles”, and provided two generalised hypotheses. The first was that certain terminology used in financial reports failed to convey to all users, or even a particular group of users, the meaning intended by its use in the report. The second looked at the interchangeability of certain terms used in financial reports, looking to see whether or not they actually convey the same meaning.

A further, and arguably more significant purpose of his study, was to test the application of an alternative technique for the measurement of meaning within accounting and for this he also employed the antecedent-consequent method, as applied earlier by Triandis (1959).

Haried (1973) listed six stimuli terms for hypothesis (I) and five sets (two per set) of alternative stimulus terms for hypothesis (II). These stimuli ranged from terms such as “Cash flow”, “Depreciation”, and “Goodwill” (to name a few) for hypothesis (I) to “Accumulated Depreciation” and “Reserve for Depreciation” (to name one set) for hypothesis (II). The terms selected were intended to represent a balance across the major sections generally presented in financial reports.

The participants in the study were a random sample of CPAs and four different classifications of users of financial reports (financial analysts, lawyers, students and investment club members). Haried (1973) used the CPAs to establish the meaning *intended* to be covered by the terms selected while the four user groups were used to establish the meaning actually *conveyed* by the terms. This understanding and comparison between sophisticated (qualified accountants) and unsophisticated users (general users) is common in many studies in the measurement of accounting meaning (see Bagranoff, 1990) and allows for a greater understanding of the structure in which meaning is believed to be held by different groups of subjects.

Scales were selected to represent the seven factor structure semantic differential established by Haried (1972), and subjects were asked to consider each of the scale items and check off the position on the scale where they felt it best represented the stimuli term. The closer to one of the bipolar adjectives the more the subject felt that a particular adjective was representative of the stimulus term; e.g., a response by a subject to the stimulus term “Generally Accepted Accounting Principles” showed that they believed the term to be extremely necessary, very permanent, somewhat exact, somewhat flexible, extremely beneficial, very controllable and very dynamic. This process provided a measure whereby an individual subject’s perceived meaning of a stimulus concept is operationally defined as a set of factor scores. This is referred to by Haried (1973, p. 121) as the “semantic profile” and each stimulus received one such profile for each subject tested. Any difference in the semantic profile represents differences in the connotative meaning associated with that stimulus term. The application of an adapted *D* statistic analysis allowed Haried to measure the relative differences in connotative meaning.

The results in general indicated that the application of the semantic differential provided *no* major indication of differences in the meaning across individual stimulus as tested under hypothesis (I) (e.g., “extraordinary items” or “goodwill”), and only some differences between interchangeable terms as tested under hypothesis (II) (e.g., “capital in excess of stated value” vs. “capital surplus”). These results, once again, raised some concern with Haried (1973) about the validity of Osgood et al.’s (1957) semantic differential technique in this setting.

Later research by Houghton (1988), (and subsequently supported by Houghton and Messier, 1991; Houghton and Hronsky, 1993; Bagranoff et al., 1994; Hronsky and Houghton, 2001 and Wines, 2006), challenged Haried’s (1972 and 1973) findings on the basis that the analysis applied under Haried’s redefined semantic differential technique was not applicable to the data set obtained in his studies. Houghton (1988) was concerned that Haried (1972) had not tested the original seven factor structure for stability and after the application of a simple scree test Houghton proposed that

Haried's results should have established only three stable factors, and not the seven reported.¹⁴

Houghton commented on this outcome, stating that:

“[o]ne is, however, left with some concern over the factor analytic stage of that study [Haried, 1972]; in particular, the determination of the number of factors, and the selection of semantic differentials that are used to describe the nature of factors” (p. 267).

Therefore Houghton's (1988) retesting of Haried's (1973) data established the existence of the following:

- “(1) a lack of consistent cognitive structure across all five groups, and
- (2) the presence of only three ‘stable’ factors for most of those groups.” (p. 269).

The conclusion reached by Houghton (1988) was that while Haried's (1972) adoption of the semantic differential technique to accounting terminology has been successful, he could not support Haried's (1972 and 1973) seven factor structure. The reanalysis of Haried's (1973) data confirmed that the “...dimensions of space are similar to those “standard” factors that were originally identified by Osgood et al. (1957).” (p. 279). On this basis Houghton concluded that “[t]he way is now open for others to pursue research into the measurement of meaning in accounting.” (p. 279).

Houghton's (1988) reanalysis of Haried's (1973) data laid the foundations for further analysis in the domain of accounting meaning, leading to a number of studies looking at a variety of terms, concepts and phrases (e.g., Houghton and Messier, 1991; Houghton, 1987a), using different groups of subjects (e.g., Houghton and Hronsky, 1993), and across different countries (e.g., Bagranoff et al., 1994).

¹⁴ The concept of factor stability is discussed in Chapter 4, Section 4.5.1.

A further development has been the *number* of semantic scale items employed by various studies. While still retaining a core element of Haried's (1972) 33 item semantic scales, researchers have applied the scales they believed to be *most appropriate* to the terms or concepts and/or subjects under examination. These ranged from a set of 22 semantic scale items in a study of the accounting term "true and fair view" by Houghton (1987a) to 12 items in a study of audit reports, by Houghton and Messier (1991).

Houghton (1987a) refined Haried's (1972) semantic differential technique, reducing the original 33 multidimensional scale items to include only those scales that were found to have a factor loading of greater than 0.5. Houghton's work resulted in a final, and somewhat stable, 22 item semantic scale which has been applied (almost without change) and validated in a number of studies in the measurement of (connotative) meaning in accounting (e.g., Houghton and Hronsky, 1993; Bagranoff et al., 1994; Hronsky and Houghton, 2001; Wines, 2006).

Connotative vs. denotative meaning

Triandis and Kilty (1968) suggested that when measuring the meaning of a word a distinction must be made between the *connotative* and *denotative* meaning of that word. While Osgood et al.'s (1957) semantic differential technique is a widely used measure of connotative meaning, Triandis and Kilty suggested that the application of Osgood et al.'s technique may result in some aspects of meaning escaping measurement.

This was Haried's (1973) motivation and therefore his study measured both the *connotative* and *denotative* meaning of the stimulus terms and concepts in order to assess the overall validity of the measurement of meaning in accounting literature. Connotative meaning refers to an accumulation of emotional associations relating to the "affective" or "attitudinal" meaning of a particular term or concept (Flamholtz and Cook, 1978; Adelberg and Farrelly, 1989). Karvel (1979, p. 33), as cited in Hronsky and Houghton (2001) believed connotative congruity to exist when individuals have a similar interpretation or reactions to an intended message. The example given by

Flamholtz and Cook was the *connotative* meaning associated with the word “Frog”. The emotional reaction could be that frog means “...warts, croaking or even slime” (p. 117).

Denotative meaning is more literal and therefore agreement between individuals will generally be reached on the message conveyed by a particular term or concept (subject to similarities in knowledge of the given field under investigation) (Haried, 1973). The denotative meaning of a symbol (word, phrase, etc.) involves the communication of an *objective* description about the object (Adelberg and Farrelly, 1989). In Flamholtz and Cook’s (1978) example, the word frog denotes a “small aquatic animal” (p. 117) and this meaning would be accepted across a wide range of subjects, irrespective of the conditions under which the subjects are being tested.

Importance to the measurement of meaning research is the understanding that *connotative* meaning drives human reaction and/or behaviour and therefore it implies some judgement of a concept by those individuals (Osgood et al., 1957). As accounting is a communication process it is the judgements made by individuals that affect the interpretation of the information being conveyed (Flamholtz and Cook, 1978). Even so, Haried (1973) argued that the semantic differential technique did not appear to be “...as relevant to accounting problems as that measured by the antecedent-consequent method...” (p. 139). He referred to the semantic differential technique as a method that is “...sufficiently sensitive to small differences on the dimensions of meaning it does measure...” (p. 139), but fails where the antecedent-consequent method succeeds.

This issue was further tested in a field experiment by Adelberg and Farrelly (1989) who measured the intergroup (between groups) and intragroup (within each group) transference of denotative and connotative meaning, respectively. They argued that while the results of their research placed accounting communication somewhere between the “worst” and the “best” on a communication continuum their study indicated that only one major communication problem exists in accounting; that is, the transfer of *connotative* meaning on an intergroup basis, that is communication

between different parties to the communication process (e.g., preparers and users). However, they did suggest that while the importance of denotative meaning is less evident on the surface it should in no way be overlooked entirely.

While Adelberg and Farrelly's (1989) findings departed from those established by Haried (1973), they did not, of themselves, invalidate Haried's original work. One issue raised by Haried that has remained accepted within the literature is the concern that *some* (accounting) terminologies could have similar connotative meaning, irrespective of their actual intended meaning. This concept was earlier supported by Triandis and Kilty (1968) who provided an example of the denotative and connotative difference in the meanings of the words "GOD" and "COCA-COLA". While their connotative meanings, as indicated by the semantic difference technique, may both be viewed as "good", "powerful" and "active" on the semantic scales they obviously have very different literal meanings for most people. This was the motivation behind Triandis's development of the antecedent-consequent method which allowed the denotative meaning of a stimulus concept to be analysed. Given the results of Haried's (1973) study under both the semantic differential (limited or no observable difference in meaning) and the antecedent-consequent (observable differences in meaning), Haried argued that the semantic differential technique was not appropriate to the measurement of meaning in accounting.

While Haried's (1973) study provided almost *contradictory* results to those of Osgood et al. (1957), Houghton's (1988) reanalysis of Haried's data effectively overturned the results of this earlier work and established the validity of the semantic differential technique for further use in accounting.

Cognitive Structure

Osgood, et al. (1957) suggested that the notion of communication has two component parts. The first component relates to the shared cognitive structure (the structure in which meaning is believed to be held) and the second component requires that the sender and receiver of communication hold the meaning of the concept within that shared cognitive structure.

The term “cognitive structure” relates to the term *cognition*, which is derived from the Latin word, *cognoscere*, meaning “to know” (Osgood, 1960). *Cognition* refers to the mental processes individuals undertake when determining meaning. This description applies to such functions as memory, attention, perception, action, problem solving and mental imagery and for this reason is fundamental in the measurement of meaning research (Osgood, 1960).

For the purpose of assessing the measurement of meaning in accounting the concept of cognitive structure (also referred to as *cognitive complexity*) relates to “...the pattern within which meaning of the concept is held in the mind of the sender or receiver” (Houghton and Messier, 1991, p. 87) and is referred to as being either simple or complex. The level of complexity is dependent upon a number of variables, including the extent of a person’s education and years of experience in a particular field of study.

Establishing the degree of shared cognitive structure is fundamental in determining differences in measured meaning. Researchers can only realistically assess whether there has been a change in the connotative meaning within, or across, a group of subjects where the compatibility of those subjects is first confirmed. A shared cognitive structure is believed to exist where subjects present the same *number* of factors for the item under investigation and those factors have highly correlated scales (referred to as same *nature* of factors) (Hronsky and Houghton, 2001).

One of the first studies in accounting to directly address this issue was Houghton (1987a). He suggested that subjects with similar levels of sophistication (levels of knowledge) about accounting information tend to exhibit a degree of shared cognitive structure. Houghton’s use of accountants and shareholders helped confirm this position, when looking to measure the meaning of the concept “true and fair view”. While adopting a similar research design to Oliver (1974) and Flamholtz and Cook (1978), Houghton (1987a) extended his study to examine the “structure” in which the two subject groups hold their meaning. This is referred to by McNamara and Moores

(1982) as “cognitive structure” and was an important step forward in this area of research.

While previous studies attempted to measure the meaning(s) various groups (e.g., accountants, investors, accounting students, financial analysts, academics, etc.) attached to accounting terms and concepts, Houghton’s (1987a) introduction of a fourth, and fundamentally important, null hypothesis changed the process in which measurement of connotative meaning studies (in accounting) were conducted. This fourth hypothesis stated:

“In relation to the concept ‘true and fair view’ there is no significant difference between accountants and shareholders with respect to the structure within which meanings are held” (p. 145).

It is accepted in the literature that an expert in a particular field will hold a more complex structure of meaning within his or her field of expertise than a non expert (Foa and Foa, 1974). Houghton (1987a) argued that an investigation into the complexity of a subject’s cognitive structure was a necessary requirement for measurement in meaning studies.

Applying a method developed for use in the field of quantitative psychology (factor comparability test) Houghton (1987a) rejected the fourth null hypothesis, suggesting that “[t]he two groups do not possess equal levels of structure complexity.” (p. 147), indicating a lack of shared cognitive structure for the terms under examination.¹⁵

Of interest is Houghton’s (1987a) comments regarding the cognitive structure of the research subjects, stating that “[w]hile it is not a measurement of meaning within the sense of Osgood et al. (1957), differences in the raw responses to the semantic scales can provide some further evidence of differences between groups.” (p. 149). The rejection of the fourth null hypothesis appeared to suggest that accountants (preparers)

¹⁵ Factor comparability was considered by Everett and Entekin (1980) to be a reliable way to test for factor structure comparability. A detailed review of this method is provided in Chapter 4, Section 4.5.1.

and shareholders (users) do not share the same cognitive structure in which meaning is believed to be held. The number of factors identified for each subject group by Houghton also suggested that accountants assess the meaning of the term “true and fair view” within a more complex structure of meaning.¹⁶ Therefore the conclusion reached by Houghton (1987a) was that the factor comparability test was appropriate for the study of measured meaning in an accounting context, with the results indicating differences in cognitive structure between the sophisticated (accountants) and unsophisticated (shareholders) subjects.

These findings were also confirmed in Houghton’s (1988) reanalysis of Haried’s (1973) data, in that a similar cognitive structure was seen to exist between the three sophisticated subject groups (accountants, financial analysts and lawyers), with the financial analysts and lawyers presenting the highest level of comparability. The other two unsophisticated subject groups (students and investment club members) did not present similarities in cognitive structures. This result in itself provided some insight into the measurement of meaning in that the sophisticated subjects did hold the meaning of the terms within the same structure as the unsophisticated subjects, which intuitively indicates a lack of shared meaning. Further analysis of the unsophisticated subjects could only be conducted internally (within group analysis). However, in Houghton’s study these two groups also presented a lack of internal comparability and were therefore deleted.

Accordingly, an understanding of the level of shared cognitive structure has a significant impact on the measurement of meaning in the current context. This issue is addressed further in Chapter 4, Section 4.5.1.

¹⁶ Accountants own meaning and accountant’s perception of shareholder’s meaning of the term “true and fair view” is held within a three factor structure while shareholder’s own meaning resulted in a two factor structure (Houghton, 1987a, p. 147).

2.5.3 *Studies conducted in the measurement of connotative meaning in accounting*

The following provides a brief review of key literature in the area of measurement of meaning in accounting research from the early 1970's to the mid 2000's.

1970s to 1980s

Oliver (1974) had earlier commented on the use of the semantic differential technique stating that it was useful for testing connotative meaning which is seen as the key determinant for communication in accounting. Oliver had argued that:

“[t]o fully indicate a lack of communication, the total message in which the concept is embedded and the source of the message must be considered. Also, other factors such as syntactic...and lexicology...play important roles in determining the degree of communication. Misinterpretations and misunderstandings do not *necessarily* result from different semantic differential scores, due to compensating context and source factors.” (p. 306).

Oliver measured interprofessional communication of eight selected accounting concepts, but unlike Haried (1973), Oliver's study selected the concepts by devising a sampling process which established what concepts, procedures, axioms, standards, titles and ideas are considered central to the understanding of accounting. The subject groups included full-time CPAs and accounting educators, with the results providing a significant list, in priority ranking, of key concepts ranging from “Planning and Control” and “Income Determination”, as highest ranking concepts, through to “Disclosure” and “Time Value of Money”, as the least important concepts.

Oliver (1974) applied Osgood et al.'s (1957) semantic differential technique to measure whether a confounding lack of communication existed with regards to the established set of accounting concepts. Oliver argued that his study differed from Haried's (1973) in several ways, therefore justifying the use of Osgood et al.'s semantic differential technique. These included the principal difference in the

functional nature of the stimulus concept and its relationship to financial reporting; and the purpose of the experimental stimulus and its role in communicating the message (p. 300). While Haried (1972 and 1973) focused on selected terms used directly in the financial statements, or, what he termed components of the specific message of the “language” of accounting, Oliver was interested in establishing the basic meaning of concepts that *underlie* accounting communication. That is, the foundations and structures that support the accounting “language” (p. 300).

Through the application of Osgood et al.’s (1957) semantic differential technique Oliver (1974) was able to replicate Osgood’s three (EPA) factor structure helping to confirm validity and sensitivity in his study. However the factor analysis did indicate some shifting of scale items among the three factors established by Osgood et al., which Oliver argued was simply caused by an inability of the accounting concepts to evoke very intense responses among the subjects. His results provided some empirical evidence to suggest that there were significant differences in the meaning of most (six of the eight) of the tested stimulus concepts across the seven professional groups studied. However, there did appear to be almost no difference in the semantic differential score within each group. As such, Oliver hypothesised that the results indicated evidence of what he called “...a lack of communication among these seven professional groups...” (p. 306) concluding that many of the messages received by the different groups (within the reporting process) did not correspond to the messages sent. He believes this could be problematic, given the need for clear communication between the different parties to the reporting process.

Oliver (1974) recognised that some might argue that the existence of a difference is simply a sign of a vigorous and professional discipline, in which the academic community is not simply in “lock-step” with the practising professional. While the results provided evidence of differences it did not help establish which group represented the proper perspective on the meaning of the stimulus terms. Therefore his conclusions simply emphasised the importance of being *aware* of the underlying differences in accounting concepts to avoid communication pitfalls. The primary responsibility for developing mechanisms for reducing semantic difficulties was seen

by Oliver to rest (but not exclusively) with the academic and practising members of the profession (p. 309).

A component of this issue was considered by Flamholtz and Cook (1978) who studied "...the role of the connotative meaning of accounting constructs in the process of introducing change in accounting" (p. 115). Their study looked at the phrase "Human Resource Accounting" (HRA) which is an accounting concept aimed at motivating managers to view people within the organisation as assets rather than expenses. It was suggested that the implications of this new and somewhat radical proposal could lead to new accounting treatment for employees, requiring standards to be drafted as well as changes in balance sheet and income statement representation. Flamholtz and Cook were interested in researching the connotative meaning of this term as they believed it could influence the acceptance of HRA by the business, professional and the academic community. They also suggested that an understanding of the measured meaning of this term could prove useful to standard-setting when establishing the relevant accounting standard to deal with this area of accounting.

Their research aimed at addressing the following research questions (p. 117):

1. What are the dimensions underlying the meaning of HRA and related concepts?
2. How does the meaning of HRA concepts differ from other accounting concepts?
3. Are the dimensions of meaning of these constructs the same for accountants and managers?
4. How do the dimensions of meaning found for constructs used in this study relate to those found by Haried (1972 and 1973) for more generalized accounting terminology, and those used by Oliver (1974) in reliance on the three dimensions found by Osgood et al. (1957) to be a fundamental structure underlying many disciplines?

Flamholtz and Cook (1978) suggested that their study differed somewhat from those of Haried (1972 and 1973) and Oliver (1974) in that neither author encompassed more recent terminology as in the case of HRA. They also validated the appropriateness of Osgood et al.'s (1957) semantic differential technique on the basis that their research was interested in the emotional and attitudinal (connotative) meaning of the concept HRA.

Flamholtz and Cook's (1978) research confirmed the existence of Osgood et al.'s (1957) three (EPA) factor structure as well as a fourth factor labelled, "manageability". Similar to Oliver (1974), there also appeared to be a cross over on some scales (some items loaded heavily on other factors) onto the three (EPA) factor structure indicating some minor deviation to Osgood et al. established factor loadings. Of even greater interest were the overall results, with one of the key conclusions (also seen as an implicit benefit of this type of research) being that the perceived negativity toward HRA is not grounded in the connotations of anti-humanistic concepts (as is believed to be the case with some critics) but in its operational ability. Also the result was not unique to the concept of HRA, with similar conclusions being observed for concepts such as "Social Accounting" and even "Accounting for Intangibles" (Flamholtz and Cook, 1978, p. 135). Therefore Flamholtz and Cook concluded that this was not an inherent defect of HRA but merely a characteristic of non-traditional accounting, helping to support the proposition that "...accounting must be viewed and studied not only as a technology, but as a psycho-technical system - a behavioural accounting phenomenon" (p. 135).

Irrespective of the comments made earlier by Jensen (1970), Flamholtz and Cook's (1978) results helped validate the use of the semantic differential technique in the study of accounting meaning.¹⁷ They supported the underlying position that the *semantic halo effect* for accounting concepts could explain resistance to accounting

¹⁷ Jensen (1970) did not support the use of methodologies grounded in behavioural sciences to support hypothesis in accounting.

change and therefore all parties to the communication process should understand such limitations.¹⁸

Contrary to Haried's (1973) conclusions, Flamholtz and Cook (1978) supported the use of the semantic differential technique for measurement of connotative meaning in accounting. Even so, it was not until the late 1980's that research into the measurement of meaning in accounting would become more popular. Houghton (1988) suggested that Haried's (1972) negative conclusions regarding the non-applicability of the semantic differential technique had discouraged researchers from pursuing work in this area. However, Houghton's reanalysis of Haried's data provided sufficient evidence to dismiss many of Haried's criticisms which is believed to have opened the way for further research in the area of measurement of meaning in accounting. Accordingly, one of the earliest studies in the 1980's was Houghton's (1987a) research into the connotative meaning of the accounting term "true and fair view" (p. 143).

Houghton (1987a) was motivated to study this term after the publication, by the NCSC, of the consultative document "*A True and Fair View and the reporting Obligations of Directors and Auditors*". His study was supported by such authors as Chastney (1975) who suggested that:

"[t]he less discussion and argument there is on the meaning of the phrase ...the greater is the possibility that there will be a variety or range of ...meanings attributed to that phrase...." (p. 41, as cited in Houghton, 1987a, p. 143).

The lack of definitional guidance surrounding the term "true and fair view" motivated Houghton (1987a) to empirically measure the connotative meaning as held by accountants and shareholders. While adopting a similar research design to Oliver (1974) and Flamholtz and Cook (1978), Houghton (1987a) extended the study to

¹⁸ The *semantic halo effect* can result from a perceived difference between traditional and non-traditional accounting terms and concepts (Bagranoff, 1990).

address "...any differences between the meaning of 'true and fair view' held by accountants and their perception of the meaning held by shareholders." (p. 144).

Houghton's (1987a) study introduced a new component, a perceived expectation of understanding of one group by another group (p.145). While previous studies attempted to measure the meaning(s) various groups (accountants, investors, accounting students, financial analysts, academics, etc.) attached to accounting concepts, Houghton (1987a) extended this analysis by requiring the accountant group to consider the meaning they believed private shareholders to have regarding the concept in question. By looking at the meaning of the term *true and fair view* as determined by accountants, shareholders, and shareholders as perceived by accountants, Houghton was able to address questions regarding differences in meaning across these three spectrums of meaning, allowing for a greater understanding of the possible changes that can occur as communication moves from the sender to the receiver.

Similar to other studies noted above, respondents indicated their understanding of the stimulus concept on a seven point scale for each of the 22 semantic scale items. Factor analysis was used to identify the factors within which meaning is believed to be held by these two groups.

The results of Houghton's (1987a) study found that while the accountants and the accountants' perception of the shareholders' meaning conformed to Osgood et al.'s (1957) three (EPA) factor structure the shareholder group only resulted in a single, less complex, factor structure.

Houghton's (1987a) extension to the measure of meaning literature was important as it helped support the proposition that accountants not only hold their meaning within a more complex cognitive structure than the shareholder group but the accountants' understanding of the shareholders meaning was also significantly different from the shareholders themselves.

The conclusion reached by Houghton (1987a) was that a significant difference existed between these two important parties to the accounting communication process when looking at the measured connotative meaning of the term “true and fair view”. His study also verified the use of Osgood et al.’s (1957) semantic differential technique for further research of this nature.

1990s

Research from the early to late 1990s focused on a range of different terms and concepts, subject groups and interrelationships. The first of these was undertaken by Houghton and Messier (1991) who examined the perceived meanings surrounding audit reports as held between auditors and bankers. The findings of their study showed that while both subject groups presented a multi-dimensional cognitive structure for the concepts under examination, the structure was not shared between the two groups. Therefore the groups did not share the same connotative meanings.

Houghton and Hronsky (1993) looked to establish the use of accounting students as appropriate surrogates for accounting practitioners in accounting research. While similarities were observed for some terms and concepts tested, the conclusions reached by Houghton and Hronsky was that experience plays a significant part in the role of meaning construction. This was supported by McNamara and Moores (1995) when looking at the cognitive structure of undergraduate students. Their contribution to this body of research was to confirm that measured meaning is affected by the nature of the concepts measured in that simple terms present different results from more complex conventions. McNamara and Moores paved the way for future research in the area of terms and concepts vs. statements and phrases.

Bagranoff et al. (1994) looked at shared meaning across national boundaries, looking at the terms “extraordinary items” by US and Australian accounting professionals. They provided evidence of significant differences in connotative meaning stating that “...cross-cultural differences do give rise to differences in the cognitive structure within which meaning is held” (p. 54). This work has aided researchers in other areas of accounting, providing empirical evidence to assist in cross cultural examinations.

Evans (2004) highlighted the dangers of misunderstandings inherent in the use of cross border communication in accounting and supported this research with Bagranoff et al.'s findings.

2000s

While the number of studies increased over the period from the late 1980s to the late 1990s there still appeared to be a significant number of avenues for future research. Accordingly, a study conducted by Hronsky and Houghton (2001) extended the boundaries of measurement of meaning research by investigating the association between measured meaning and decision outcomes.¹⁹

Hronsky and Houghton (2001) believe that standard setters play an important role in increasing the communication effectiveness of accounting information and have an opportunity to minimise the possible abusive behaviour of managers when publishing accounting standards. They argued that accounting standards can never be “watertight” and therefore the possibility for creative or aggressive accounting is always imminent. Hronsky and Houghton felt it possible for standard setters to use language carefully to “...close ‘gaps’ in the rules and amend vague and/or incomplete rules.” (p. 123). They suggest that “...clearly-worded standards provide guidance for auditors in audit-client conflict situations, and reduce the justifiability of aggressive reporting decisions.” (p. 124). It is the effective operation of accounting standards to act as a constraint to aggressive reporting and therefore improve the overall reliability and performance of accounting communication (Hronsky and Houghton, 2001).

Hronsky and Houghton (2001) examined what they noted as being “...one instance of regulators playing...the language game: the change in Australian accounting standards of the definition of an extraordinary item.” (p. 124). While the purpose of the change was to “...remove the flexibility inherent in the existing definition, and thus limit the inconsistencies and alleged opportunism observed in practice” (p. 124), Hronsky and Houghton believed this change required empirical evidence to support

¹⁹ Decision outcomes are the resulting accounting choices undertaken by specific user groups.

this proposition. By using a between-subject design to measure the meaning of the accounting term “extraordinary items” as defined under the old and new Australian standard they were able to study the impact of the change in the definition.

The subjects were experienced auditors from four of the Big 6 accounting firms in Melbourne, and were assigned to two groups. The first was used to test the meaning of the old definition while the second group tested the meaning of the new definition. The first hypothesis tested was therefore: “[t]here is no significant difference between the meaning of the concept ‘extraordinary item’ of the old Australian definition and the new definitions” (p. 126).

The method employed by Hronsky and Houghton (2001) was the semantic differential technique developed by Osgood et al. (1957), using the 22 item scale identified earlier by Houghton (1987a). Hronsky and Houghton argued that “...the scales have been used and validated in a number of studies...and are accordingly accepted as valid for the present study.” (p. 128).

Hronsky and Houghton (2001) extended the literature by examining the effect that meaning had on “behavioural outcomes” (p. 124). This gave rise to the second hypothesis: “[t]here is no significant difference between the classification decisions made by subjects on the basis of the old Australian definition and on the basis of the new definition” (p. 127). Of even greater importance to the further development of the literature in the area of measurement of meaning in accounting was the third hypothesis: “[t]hat variability in extraordinary classification decisions may be explained by the variability in the meaning of the concept upon which decisions are based” (p. 127).

The acceptance of the third hypothesis would establish a fundamental link between the measured meaning of a concept and the implication for decision outcomes. Hronsky and Houghton suggested that such linkage would provide evidence to help understand how changes in accounting standards flow through to decisions made by

information users. Their contribution to the literature would help provide some explanation of the role of meaning in accounting decision making. The results provided empirical evidence that auditors ascribe different meanings to the old and the new definitions of the term “extraordinary items” and that those differences are systematically associated with the resulting classification decisions. While applied to a retrospective change in the definition Hronsky and Houghton (2001) believed that wording changes, however subtle, are perceived to have different meanings within a given group of subjects. Of importance to the current study is the concluding comments that:

“...the methodology is suitable to evaluate the potential impact on disclosure decisions of *proposed* accounting standards, and to choose amongst alternative wording of proposed standards or regulations. This can assist in accounting standards operating more effectively as a constraint on aggressive reporting, in tandem with the role of the auditor as a monitor of the financial statements.” (p. 135).

The most recently published study in the area of the measurement of meaning in accounting looked at the connotative meaning of the term “auditor independence” in alternative audit settings (Wines, 2006). While Wines applied Osgood et al.’s (1957) framework for measuring meaning, the research instrument differed from prior research in that it presented subjects (third year auditing students from two Australian Universities) with three audit engagement case scenarios. This variation allowed Wines to identify the general dimensions (cognitive structure) within which the term is considered by subjects and examine the manner and degree in which the measured connotative meaning changes in respect to the alternative cases.

While one of the three cases represented no significant audit threat, the remaining two cases represented significant potential threats. This allowed for greater variability in the semantic differential scale to be observed as each subject would be assessing the concept of independence against a given scenario where an audit threat may or may not exist. Accordingly, after reading each case situation in the research instrument,

subjects were asked to: (a) answer a question which elicited their perception of the audit firm's independence in the "presented situation" (p. 99), and (b) indicate their interpretation of "...the audit firm's independence in relation to a twenty-two semantic differential scale" (p. 99). The items on the semantic scale were taken from those employed by Houghton (1987b), Houghton and Hronsky (1993), Bagranoff et al. (1994) and Hronsky and Houghton (2001).

Consistent with prior measurement of meaning literature, factor analysis with varimax rotation was used to reduce the data set. This resulted in the identification of five factors with eigenvalues of greater than one. By applying the more rigorous factor comparability test this was reduced further to a stable *two* factor solution. While the three (EPA) factor structure identified by Osgood et al. (1957), and later confirmed by other researchers (e.g., Houghton, 1987a, 1987b; Houghton and Hronsky, 1993; Hronsky and Houghton, 2001), did not appear, Wines argued that it was "...partly consistent" (p. 110) with this prior research.

Wines (2006) results indicated that the concept of "auditor independence" was interpreted by the participants within a "...multifaceted, rather than uni-dimensional, structure." (p.112). The most notable variation from Osgood et al.'s (1957) results was under the *potency* and *activity* factors, with several scales from both these factors loading heavily onto a single factor, labelled as "variability" (p. 103) for the purpose of Wine's study.

Similar to Wines (2001), Houghton and Messier's (1991) results also varied from the traditional three (EPA) factor structure established by Osgood et al. (1957). Houghton and Messier found that several scales from Osgood et al.'s *potency* and *activity* factors loaded heaviest onto the second factors. On reviewing the individual scales this factor was labelled "obligatory" (p. 92) due to the heavy weighting placed on such scales as necessary-unnecessary, discretionary-required and real-imaginary. Contributing to the measurement of meaning in accounting literature is the fact that absolute conformity to Osgood et al.'s (1957) three (EPA) factor structure was not necessary to validate the use of the semantic differential technique in that, some scales

from each of the three factors (evaluative, potency and activity) may shift depending on the subjects and concepts under examination. Houghton and Messier (1991) commented on this point noting that the results of their study indicated that, perhaps, the *obligatory* dimension is relevant only to "...the auditing domain of meaning" (p. 92). They also believed that this rationale also explained the absence of the activity dimension.

Houghton and Messier's (1991) results confirmed the validity of the semantic differential technique for measuring meaning in accounting and support, to some extent, variations on Osgood et al.'s (1957) original three (EPA) factor structure. The underlying reasoning for such variations would appear to relate to the specific area of interest, as confirmed when looking at concepts relevant to the area of *auditing*. As no study has specifically addressed the concept of "cash" in the current setting conformity with the three (EPA) factor structure may not necessarily exist. However, of importance to the literature is the extent to which conformity does exist across the three subject groups; preparers, auditors and users.

2.6 Summary

A review of the literature indicates that the withdrawal of the fund statement and the introduction of the cash flow statement in the mid 1980s provided an opportunity to increase the overall *usefulness* and *reliability* of information presented in the financial statements. While it would appear that a significant amount of empirical research has been conducted in the area of increased decision usefulness associated with this move, little evidence exists to confirm the overall reliability of the cash flow statement itself.

Several issues have been noted in the literature as being key factors which contribute to a claim of reliability of the cash flow statement, including a lack of susceptibility to creative or aggressive reporting techniques, substance over form and the lack of judgement and definitional interpretation being required. However, recent discussions within the accounting profession regarding possible manipulation of the cash flow statement has raised concerns with the author as to the overall validity of *reliability* claims. This has been supported by examples of manipulation of the cash flow

statement in companies such as Enron and WorldCom and puts further doubt about the strength of prior claims of reliability. Also, literature in the creative and aggressive reporting arena has raised the issue of *definition clarity* and *interpretation guidance* as being key attributes of increased reliability of financial statements and is seen as a way to help minimise the possibility of abusive financial reporting behaviour among companies.

A review of the old and new definition of the concept “cash” was undertaken, considering the possibility for interpretational differences and/or ambiguity within these definitions. This is important as the reasons for the removal of the fund statement had been partly blamed on the lack of definitional guidance surrounding the term “fund”. Therefore similar concerns regarding the concept “cash”, as defined for the purpose of the cash flow statement, are also raised. The conclusion reached is that a review of the interpreted meaning of these definitions will provide useful information when assessing the overall impact of the move to NZ IAS 7, and provide further evidence to assess the overall reliability of the cash flow statement.

A review of the general literature surrounding the measurement of meaning was undertaken, considering briefly both qualitative and quantitative methods. Given that the current study is looking to establish statistical evidence of the implications that changes in the definition of “cash”, a quantitative approach was considered appropriate.

A detailed analysis of the semantic differential technique, developed by Osgood et al. (1957), provided sufficient evidence to support its use in the current study. Osgood et al.’s work had led them to develop a method for measuring the connotative meaning of terms, concepts, phrases and statements, as interpreted by various subjects. The use of factor analysis provided a three (EPA) factor structure which Osgood et al. believed was representative of meaning across most disciplines.

Most of the issues surrounding the use of the semantic differential technique relate to the identification of relevant semantic scale items, the appropriateness of reviewing connotative meaning as opposed to denotative meaning and the generalisability of Osgood et al.'s results to other disciplines. As noted, these issues have been the focus of a number of studies in this field of interest.

In an accounting setting Houghton (1987a) concluded that a 22 item semantic scale was appropriate for use when measuring meaning in accounting and that this has been verified in the literature.

With regards to the review of connotative meaning, the literature also supported this approach as it is believed that connotative meaning is what drives behaviour. Given that accounting is a behavioural discipline the study of connotative meaning is appropriate for the study of meaning in accounting.

Hariet (1972) was the first researcher to undertake measurement of connotative meaning in an accounting arena. He developed semantic scale items relevant for use in accounting research and provided guidance for subsequent researchers. Houghton's (1988) later use of Everett and Entrekin's (1980) factor comparability test helped establish a robust and stable factor structure for use in future research, which has been confirmed and validated in a number of subsequent studies.

It has been established that sophisticated subjects tend to display a shared cognitive structure in which meaning is believed to be held. This is important as the absence of such shared structures will prevent further analysis of measured meaning of subject groups, and while a shared cognitive structure does not in its own right confirm a shared connotative meaning it is a prerequisite for further investigation into the measurement of meaning. This issue has been the focus of several key studies and has added to the literature by presenting evidence to support the proposition that the level of knowledge (sophistication) a person has in a particular field of interest affects the structure in which meaning is held.

The most recent studies in the area of measurement of connotative meaning in accounting are by Hronsky and Houghton (2001) and Wines (2006). Both studies contributed to the literature by extending their studies to test the association between measured meaning and the decisions made by subjects (decision outcomes). The results of these studies confirmed a connection between the meaning subjects attribute to certain terms and concepts and the resulting decisions made by those subjects. Hronsky and Houghton's study is significant to the current study as they reviewed the change in definition of "extraordinary items" resulting from changes to the Australian accounting standards. They provide justification to the current study by suggesting that researchers should continue to investigate possible effects of changes to accounting standards, believing that the implications for standard setters themselves could be significant.

The next chapter will address the research questions and provide the testable alternate hypotheses.

Chapter 3

Research Questions

3.1 Introduction

This chapter addresses the research questions for the current study and establishes the testable alternate hypotheses. These questions and associated hypotheses are considered across four sections, with the first section looking at the cognitive structure in which meaning is believed to be held, followed by the measurement of connotative meaning in the second section. The third section addresses the decision outcomes and their relationship to the measured meanings of the concept “cash” upon which these decisions are based. Finally, the research question addressing the perceived *quality* of the cash flow statement under each of the two definitions is considered.

3.2 Cognitive Structure

Smith and Smith (1971) suggested that communication in accounting can only occur where the meaning intended by the sender is interpreted by the receiver. A key question raised by Adelberg and Farrelly (1989) is whether “...financial statement terms ‘say’ the same thing to all (that is, are there common meanings), or do they ‘say’ different things, depending on whether one is a producer or user of a financial statement?” (p. 34). The inability of financial statements to convey the required meaning could result in “distortions” which could impact on the decisions made by the receiver of that information.

Houghton (1987a) commented on the transfer of meaning and believed that a key element required for effective communication is the presence of a shared cognitive structure in which the meaning of terms and concepts used are held. Studies in the area of measurement of (connotative) meaning in accounting have confirmed the importance of establishing the degree of shared cognitive structure between subjects in order to determine and measure the meaning associated with a given term or concept (e.g., Houghton, 1987a and 1988). A prerequisite for shared cognitive structure is believed to include a similar level of “sophistication” in the area of interest (Houghton, 1987a).

The current study has identified three groups of subjects: preparers, auditors and users, each with their own differing skills, training and understanding. Given the importance of these three parties to the financial reporting process an understanding of the level of shared cognitive structure is needed to appreciate the effectiveness of the communication process.

If these three groups do not share the same cognitive structure then differences in meaning between these groups may inherently exist. In this instance, further testing for between group differences may not be required, nor theoretically justified, as they will be assumed to process information differently and therefore not hold a similar meaning for the term or concept under investigation.

With this in mind the first research question to be addressed in the current study is:

1. Do preparers, auditors and users share the same cognitive structure for the meaning of the concept “cash”, as it relates to the cash flow statement?

Prior studies have indicated a strong relationship between the level of sophistication exhibited by specific subject groups for terms and concepts used in accounting and the degree of shared cognitive structure in which meaning is believed to be held (e.g., Oliver, 1974; Houghton 1987a, 1988; Houghton and Messier, 1991; Houghton and Hronsky, 1993; Hronsky and Houghton, 2001; Wines, 2006). A number of these

studies have provided evidence to suggest that preparers, auditors and specific users (e.g., bankers and shareholders) do not share the same cognitive structure in which the meaning of certain accounting terms and concepts are held. Therefore the following alternate hypotheses are proposed for the current study:

Alternate hypotheses

- 1.1 *In relation to the concept of “cash”, a significant difference exists between preparers and auditors with respect to the cognitive structure within which meaning is held.*
- 1.2 *In relation to the concept of “cash”, a significant difference exists between preparers and users with respect to the cognitive structure within which meaning is held.*
- 1.3 *In relation to the concept of “cash”, a significant difference exists between auditors and users with respect to the cognitive structure within which meaning is held.*

If differences in cognitive structure are observed then conclusions may be drawn regarding the effectiveness of the communication between these parties as they may not process information in a similar way. This could lead to a lack of sender/receiver consistency, resulting in a loss of communication effectiveness (Smith and Smith, 1971).

3.3 Measurement of meaning

3.3.1 Between subject groups

While a lack of shared cognitive structure does present the researcher with some evidence of a lack of shared connotative meaning concerning the concept of “cash”, the existence of a shared cognitive structure does not, in itself, confirm shared connotative meaning (Houghton, 1988).

This requires further testing and for this reason the current study poses the second research question:

2. Is there any difference in the meaning of the concept “cash”, as it relates to the cash flow statement, as interpreted between the preparer, auditor and user financial reporting groups?

Studies as early as Flamholtz and Cook (1978) had confirmed differences in the measured meaning of concepts between different parties to the accounting communication process. Their study confirmed that accountants and managers interpret the meaning of the concept “Human Resource Accounting” differently, restricting the uniformed acceptance of this accounting term. Similar results were identified by Houghton (1987a) when looking at the measured meaning of the term ‘true and fair view’ between accountants and shareholders.

Accordingly, significant differences in the meaning of the concept “cash”, as defined under FRS 10 and NZ IAS 7, held between the three financial reporting groups are anticipated in the current study. This leads to the following alternate hypotheses:

Alternate hypotheses

- 2.1 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10, exists between preparers and auditors.*
- 2.2 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10, exists between preparers and users.*
- 2.3 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10, exists between auditors and users.*

- 2.4 *A significant difference in the measured meaning of the concept “cash”, as defined in NZ IAS 7, exists between preparers and auditors.*
- 2.5 *A significant difference in the measured meaning of the concept “cash”, as defined in NZ IAS 7, exists between preparers and users.*
- 2.6 *A significant difference in the measured meaning of the concept “cash”, as defined in NZ IAS 7, exists between auditors and users.*

It is important to note that if pairs of reporting groups fail to exhibit a shared cognitive structure (as established under hypotheses 1.1, 1.2 and 1.3), hypotheses 2.1 to 2.6 will not be able to be tested for those pairs. In this case the analysis will proceed directly to Hypothesis 3.1 below for those reporting group pairs.

3.3.2 Across definitions and within subject groups

Hronsky and Houghton (2001) rejected the null hypothesis that there was no significant difference between the measured meaning of the concept “extraordinary items” depicted by the old Australian definition and the new Australian definition between qualified auditors. Earlier, Houghton and Messier (1991) had confirmed the existence of significant differences when looking at the wording in auditor reports between auditors and bankers, using two different classes of wording and different types of audit reports.

This helps to support the belief that an individual reporting group will demonstrate a significant difference in measured meaning across two definitions for a specific accounting term or concepts. This issue has been reemphasised with the recent change to the definition of the term “cash”, brought about through a move to IFRS.

Therefore the current research will address the third research question:

3. Is there any difference between the meaning of the concept of “cash”, as defined under FRS 10 and NZ IAS 7, held within each of the three financial reporting groups?

Given the results established by Houghton and Messier (1991) and Hronsky and Houghton (2001), the current study establishes the following three alternate hypotheses.

Alternate hypotheses

- 3.1 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10 and NZ IAS 7, exists within the preparer financial reporting group.*
- 3.2 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10 and NZ IAS 7, exists within the auditor financial reporting group.*
- 3.3 *A significant difference in the measured meaning of the concept “cash”, as defined in FRS 10 and NZ IAS 7, exists within the user financial reporting group.*

3.4 Decision Outcomes

Hronsky and Houghton (2001) were the first researchers in this field of study (measurement of connotative meaning in accounting) to seek evidence of a relationship between the decision outcomes of each subject and the meaning attributed to accounting terms and concepts by that same subject. The results of Hronsky and Houghton’s study supported the proposition that a change in the definition of the term “extraordinary items” resulted in subjects making different decisions. They also confirmed that the changes in decision outcomes were linked to the measured meaning established using the semantic differential technique.

This approach was later supported by Wines (2006), who tested the relationship between the measured meaning of the concept “auditor independence” and subjects’ (undergraduate students) perception of the auditor’s independence using three case scenarios.

One objective of the current study is to further advance this body of literature, testing the relationship between the measured meanings of the concept “cash”, as defined under FRS 10 and NZ IAS 7, and the determining the decision outcomes using 10 separate cases presented to all subject groups. This element of the study requires the addition of two further research questions. The first relates to whether there is an observable difference in the decisions made by each subject group under the two different definitions of “cash”, while the second addresses the relationship between the decision outcomes and measured meaning.

This gives rise to the fourth and fifth research questions and resulting alternate hypotheses. These are as follows:

4. Do the two different definitions of the concept “cash” presented in FRS 10 and NZ IAS 7 result in the preparer, auditor and user reporting groups making different decisions?

Alternate hypotheses

- 4.1 *A significant difference exists in the decision outcomes by preparers resulting from the definitions of “cash” presented in FRS 10 and NZ IAS 7.*
- 4.2 *A significant difference exists in the decision outcomes by auditors resulting from the definitions of “cash” presented in FRS 10 and NZ IAS 7.*
- 4.3 *A significant difference exists in the decision outcomes by users resulting from the definitions of “cash” presented in FRS 10 and NZ IAS 7.*

5. Are the decision outcomes in each of the 10 cases related to the measured meaning of the concept of “cash” held by each of the three financial reporting groups?

Alternate hypotheses

- 5.1 *The variability in the decision outcome for the preparer group, from each of the 10 cases, may be explained by the variability in the meaning of the concept upon which the decisions are based.*
- 5.2 *The variability in the decision outcome for the auditor group, from each of the 10 cases, may be explained by the variability in the meaning of the concept upon which the decisions are based.*
- 5.3 *The variability in the decision outcome for the user group, from each of the 10 cases, may be explained by the variability in the meaning of the concept upon which the decisions are based.*

The acceptance of hypotheses 4.1 to 4.3 could indicate that subjects will make different decisions regarding the classification of “cash” items (whether or not an item is cash for the purpose of the cash flow statement), as a result of the two definitions presented un FRS 10 and NZ IAS 7.

The acceptance of hypotheses 5.1 to 5.3 could indicate that a change in the connotative meaning of “cash” brought about by the change in the definition of “cash” will result in a change in the decision outcomes for either of the financial reporting groups. This could lead to a greater understanding of the implications of the recent wording changes brought about by the move to IFRS.

3.5 Definition Quality

The final stage in the current study addresses the overall perception that each subject has regarding the *quality* of the definition of “cash” they have been presented with. The concept of “quality” for the purpose of this study relates to factors identified in both the New Zealand Framework and by researchers such as Jones et al. (1995), as instrumental in ensuring good communication of accounting information. This includes factors such as: increased consistency, a lack of ambiguity, improved precision and an increase in comparability across financial statements (see Chapter 5, Section 5.7 for further discussion).

As no prior study has specifically addressed this issue in the current setting, the current study will test this proposition by way of research question (6).

6. Has the new definition of cash, established under NZ IAS 7, improved the *quality* of the cash flow statement, as perceived by the three financial reporting groups?

3.6 Summary

Six research questions are presented dealing with the cognitive structure of the three financial reporting groups, the measurement of meaning, the decision outcomes from the 10 cases established in the research instrument, the relationship between the decision outcomes and measured meaning, and finally the perceived *quality* of the cash flow statement resulting from the two definitions of “cash” under FRS 10 and NZ IAS 7.

These research questions lead to eighteen testable hypotheses, which are addressed in Chapters 5, “Results”, and 6, “Discussion”.

Chapter 4

Research Method

4.1 Introduction

This chapter outlines the research method used in the current study to address the research questions established in Chapter 2. The chapter begins with a review of the research design followed by an analysis of the subject selection criterion. The construction of the research instrument is then considered, followed by a review of the administration process applicable to the data collection phase. Finally, the data analysis method is discussed and a summary is provided.

4.2 Research Design

The study consists of a *between-subjects 2 x 3 factorial design* in which the first factor reflects the old and new definition of the concept “cash” while the second factor reflects the three financial reporting groups: preparers, auditors and users. Each financial reporting group is randomly divided in half, allowing each half (definition group) to receive one of the two definitions of the concept under examination. Therefore one half of each definition group receives the old definition of “cash”, as noted in FRS 10, while the remaining half receives the new definition found under NZ IAS 7. This allows for both an intergroup (across the three financial reporting groups) and intragroup (between the old and new definition groups) analysis to be conducted.

4.3 Subject Selection

The subjects identified for this study are preparers, auditors and users. The establishment of each financial reporting group is important to the research objectives set out in Chapter 1. While prior measure of meaning studies have used each of these financial reporting groups either individually or in pairs (e.g., Oliver, 1974; Flamholtz and Cook, 1978; Houghton, 1987; Houghton and Hronsky, 1993; Hronsky and Houghton, 2001), none have combined all three.

4.3.1 *The accounting communication process*

The three financial reporting groups identified are fundamental to the current study, as each group is seen to play a specific and distinct role in the financial reporting process. This is supported by Bedford and Baladouni (1962) who recognise the importance which each group plays in meeting the overall objectives of accounting.

The role of communication in the accounting domain was the key focus of Bedford and Baladouni's (1962) work, developing a communication theory approach to accounting which draws on the work of such scholars as Osgood, Wilson, Shannon and Weaver.²⁰ Bedford and Baladouni, like many others (e.g., Haried, 1972; Oliver, 1974; Flamholtz and Cook, 1978; Adelberg and Farrelly, 1989; Bagranoff et al., 1994; and Wines, 2006) emphasise the importance of effective communication in the accounting process, recognising the need for constant improvement.

Bedford and Baladouni (1962) agree that their communication model is not significantly different to models developed in other disciplines (e.g., Shannon and Weaver, 1949) in the sense that they all include three indispensable elements: the source (sender), the message (the information content), and the destination (receiver). Given that communication in accounting involves an interaction process between different participants to the reporting process it is understandable that the underlying

²⁰ These authors are all well respected for their contribution to communication theory and communication model development.

relationship between the sender and the receiver is seen to be of critical importance (Bedford and Baladouni).

Accordingly, Bedford and Baladouni (1962) identified the following four key elements within their model, represented by what they defined as “...a matrix of communication” (p. 653). This matrix of communication is represented by: the economic events of (1) a business enterprise, (2) the accountant, (3) the accounting statements and (4) the users of those statements. While each element is interlinked it is the sequential flow of information from elements one to four that is fundamental to the communication process, and at the heart of this process is what Bedford and Baladouni describe as the *fidelity* and *significance* of the message being transmitted from the accountant (2) to the user (4).

Fidelity relates to the clarity of the message being sent while significance is defined as the relevance and adequacy of the information being transferred. Both these factors contribute to the overall quality of the communication process in accounting and are therefore fundamental to ensuring “...perfect communication” (p. 656) between each participant.²¹ Of significance to this study are the participants associated with the flow of the message; the accountant and the user of that message. While Bedford and Baladouni (1962) assumed auditors and accountants to be one and the same for the purpose of their model this study treats them as separate elements to the communication process. The reason being is that these two participants perform different roles and face different incentives. Consequently, they each may impact differently on the communication process. Therefore, the current study may help support, or even challenge, Bedford and Baladouni’s assumption in this respect.

4.3.2 Preparers

Decisions by preparers regarding the form and content of financial statements are likely, if material, to impact on the decision outcomes of most down stream user

²¹ Perfect communication describes the situation where the message produced by the sender is interpreted or decoded at the destination with one hundred percent fidelity.

groups (Oliver, 1974). Preparer decisions may have intentional²² or unintentional²³ consequences, including a significant impact on what Francis and Schipper (1999) describe as the "...value relevance" of the financial statements (p. 319). Importantly for this study, if no common understanding of the terms and concepts used by preparers exist, then this too may impact on the value relevance, and consequently on the decision outcomes, of various users (Mason and Gibbins, 1991).

It has been well established practice in prior studies (e.g., Oliver, 1974; Flamholtz and Cook, 1978; Houghton, 1987a; Houghton and Hronsky, 1993) to treat *accountants* as being synonymous with *preparers* of financial statements. However, what constitutes an *accountant* has historically been dependent on the objective(s) of any given study and the country and accounting framework in which the accounting profession operates.

In the US, Oliver (1974) used the AICPA list of members to define his sample group of accountants, while Flamholtz and Cook's (1978) study considered a person currently employed as an accountant within a chartered accounting firm acceptable as a valid representative of the accounting subject group. This resulted in Flamholtz and Cook's subject group ranging from recent graduates, holding entry-level positions, to those holding more senior positions.

In Australia, Houghton (1987a) categorised accountants as those who held "professional accounting qualifications" (p. 146). Given that Houghton used the term "chartered accountant" (p. 146) when describing these subjects it is likely that the *professional qualifications* that he alluded to is associated with membership to one of the two professional accounting bodies operating in Australia at that time. Houghton and Hronsky (1993) used a variation on Houghton's (1987a) criteria, stating that

²² Fischer and Verrecchia (2000) refer to intentional changes in financial reporting information as reporting "bias", p. 229.

²³ Unintentional changes can arise through the application of alternative GAAP measurements (Pope, 1993) and insufficient clarity within the accounting framework. These include (but are not limited to) (1) legitimate choices between different accounting methods, (2) variation in values caused by the application of different measurement systems (3) differences in the presentation of transactions and events caused by interpretation of accounting standards and (4) inherent difficulties surrounding the estimation of future events and their resulting cash flows.

accountants, for the purpose of their study, were “accounting practitioners” (p. 134). These subjects were assumed to be qualified accountants as opposed to recent accounting graduates.

As supported by the literature the preparer subject group for this study are defined as fully qualified members of the College of Chartered Accountants (CA’s) of the New Zealand Institute of Chartered Accountants (NZICA). The CA qualification is seen as the highest level of professional qualification for accounting in New Zealand and therefore fits in with prior research classifications of a *professionally qualified accountant*.

To help ensure consistency across the range of preparer subjects, the preparer group has been limited to people (subjects) who hold a current CA qualification, or international equivalent, and are currently working in an accounting decision making role (such as a senior accountant, financial controller, Chief Financial Officer or a role similar in nature). The members’ list from NZICA provided the source listing for this subject group.

4.3.3 Auditors

The most recent study involving the use of auditors as subjects for research in the measurement of meaning literature is by Hronsky and Houghton (2001). In their study, Hronsky and Houghton use the term “experienced auditor” (p. 128), defined as one that has had no less than three years’ audit experience, to identify suitable subjects. Hronsky and Houghton argued that a third year auditor had sufficient experience to make an initial judgement on issues of technical meaning and even though they did not prepare the financial accounts, they had sufficient influence over the final presentation to contribute to the accounting communication process. Given the similarities of the current study to Hronsky and Houghton (2001), experienced auditors (those that had a minimum of three years’ audit experience) are used as representatives of the second financial reporting group.

The auditor subject group was randomly drawn from three of the *Big 4* Chartered Accounting (CA) firms'²⁴ audit departments, operating in the three major centres in New Zealand.²⁵ All firms had been contacted prior to the distribution of the survey and had agreed to distribute the experimental instrument through their own intranets. The *Big 4* CA firms are seen by the author as the most appropriate intermediary organisations for gaining access to qualified auditors as they all have extensive audit departments and significant ongoing training programs resulting in large numbers of suitably qualified subjects. It has also been well accepted that the *Big 4* CA firms dominate the audits of listed companies and therefore are representative of the audit subjects required in the current study (Anonymous, 2006).

4.3.4 Users

While it is agreed that there are many different classes of financial statement users, it is commonly accepted that investors represent a company's principal consumer of published financial reports (Barth, Beaver and Landsman, 2001).²⁶ Investors provide capital which allows for the establishment and growth of companies, and in return investors expect to receive a return on their investment by way of dividends, increase in share price, or both (Clarke and Robb, 2001). To allow for informed investment decisions, investors require information on the financial performance, position and cash flows of their investments, which is partly achieved through the receipt of financial statements from the investors' company.

The New Zealand Framework identifies present and potential investors as the first listed user group of financial statements (Paragraph 9) while The Companies Act 1993 provides legal justification for this focus, requiring the board of every company to publish, within 5 months after balance date, an annual report for the benefit of "shareholders" (section 208). The annual report provides vital information about the company's (and its management's) performance and use of resources, thus permitting investment in the company to be analysed on a regular basis.

²⁴ KPMG, PricewaterhouseCoopers, and Ernst & Young. Deloitte was unable to participate in the study due to time constraints.

²⁵ Christchurch, Wellington and Auckland.

²⁶ For the purpose of this chapter, the word "investor" is synonymous with "shareholder".

Houghton (1987a), somewhat arbitrarily, defined investors as those with an average portfolio of approximately \$8,200 (although this criterion would appear to have been established retrospectively, as the subject group(s) were participants in a course run under the sponsorship of the Australian university). This resulted in a non-random sample which limited the generalisability of Houghton's results.

This issue has been partly addressed in the current study by reducing the diversity of the underlying skills and knowledge of the user group. This is important as a shared cognitive structure of meaning is necessary to measure connotative meaning in accounting. If the subjects are seen as significantly different in terms of their sophistication in a specified field of interest then they cannot be groups for the purpose of further analysis (Wines, 2006).

Houghton (1988) confirmed this position by dropping "members of the investment club" (p. 271) after the results of the factors comparability test failed to provide evidence of a shared cognitive structure of meaning. Houghton suggested that this was a result of the many different levels of sophistication within a single sample group.

The current study addresses this issue by selecting all current members of the CFA Society of New Zealand (CFA) as representatives of the user subject group. Due to the qualification requirements of the CFA the results of this study should indicate a more consistent or stable cognitive structure within the user group.²⁷ This may increase the validity of the results should a difference be found to exist between the three financial reporting groups under examination.

²⁷ To become a member of the CFA an investment professional must meet **all** of the criteria listed below:

1. Hold a bachelor's degree from an accredited institution or have equivalent education or work experience
2. Pass Level I of the CFA exam or such other appropriate examination as approved by the Board of Governors **or** pass the self-administered Standards of Practice Examination.
3. Have 48 months of acceptable professional work experience in the investment decision-making process
4. Agree to adhere to and sign the Member's Agreement, a Professional Conduct Statement, and any additional documentation requested by the CFA Institute.

4.4 Research Instrument

In addressing research questions (1), (2) and (3) (shared cognitive structure and the measurement of meaning) this study employed a variation of the semantic differential technique first developed by Osgood et al. (1957) for use in the measurement of meaning research. This method was later modified for use in the accounting domain by Haried (1972) who established a 33 item semantic differential scale. However, while Haried's study suggested that connotative meaning in accounting fell within a seven factor structure, further factor analysis conducted by Houghton (1988) revealed the acceptance of only 22 of Haried's 33 scales due to changes in the factor loading (correlations) cut-off.²⁸ Therefore 11 of Haried's original scales are believed to be ineffective in measuring meaning within an accounting setting. While Houghton's (1988) study reconfirmed the existence of Osgood et al.'s (1957) three (EPA) factor structure, he also noted the "...degree of subjectivity involved in the labelling of factors" (p. 270). Any differences between Osgood et al. and Houghton's results were explained, in part, as "...a reflection of the domain of interest" (p. 271) as opposed to any real fundamental methodological reasoning.

The reduction of Haried's (1972) 33 item scale was seen as an important step forward in the area of measurement of meaning in accounting in that an application of Haried's seven factor structure would most likely lead to no observable difference in connotative meaning for many key accounting terms and concepts subsequently tested (Houghton, 1988). This was confirmed by Haried's (1973) study where he did not find any evidence of significant difference in the meaning for the several accounting terms tested. However, after retesting Haried's data, Houghton (1988) found the emergence of the original three (EPA) factor structure and confirmed that differences in connotative meaning did, in fact, exist. Accordingly, the modified 22 item instrument is recognised in the literature as the most appropriate scale system to measure connotative meaning in the accounting domain (Houghton, 1987a; Houghton,

²⁸ Houghton (1988) accepted all factor loadings of greater than 0.5. Haried (1972) assigned scale factors based on their loadings being the highest among the other factor loading and remarkably higher than other scores on that factor. Therefore it was possible that "...a scale which loads only 0.25 could be assigned if all the other loadings are, say, 0.05 or less and a scale which loads 0.48 could go unassigned if the next lowest loading is, say, 0.38" (Houghton, 1988, p. 266).

1988; Houghton and Hronsky, 1993; Houghton and Messier, 1991; Bagranoff, 1990; Bagranoff et al., 1994; Hronsky and Houghton, 2001; Wines, 2006).

This study therefore applies the 22 item semantic differential technique identified by Houghton (1987a), including the reverse scoring (random flipping of the left and right sides of some scales) to help increase subjects' attention levels. Houghton's instrument has remained unchanged since it was first published and has therefore been well validated in the literature.

4.4.1 The survey instrument

The survey instrument is made up of four key tasks (see Appendix A). Task (1) required each subject to consider the concept "cash", as defined by its allocated definition (either FRS 10 or NZ IAS 7), then assess its meaning according to the 22 item semantic differential technique provided. To address the decision making implications of the allocated definition, two further tasks (Tasks 2 and 3) are presented to each subject.

Task (2) presented a series of 10 specific balance sheet items (referred to as *cases* for the purpose of this study) and instructed subjects to indicate whether or not they believed the case to represent "*clearly an item of cash*" when applying their respective definition of the concept "cash". A tick placed beside each item under the decision headings, "yes" or "no", provided this study with information on the decision outcome of each subject when prompted with their allotted definition. As recommended by Hronsky and Houghton (2001), a further question is posed which requires each subject to indicate the *degree* to which they believe the specific cases noted in Task (2) represent an item of cash (as it relates to the cash flow statement). This is achieved in Task (3) which provides a 1 to 6 Likert scale, (1) representing "clearly an item of cash" and (6) representing "clearly not an item of cash" (see Appendix A, Task (3)). This part of the research instrument helps determine the degree of confidence each subject has in each decision outcome and will assist in addressing research question (4): do the two different definitions of the concept

“cash” presented in FRS 10 and NZ IAS 7 result in the preparer, auditor and user reporting groups making different decisions.

Task (4) extends Hronsky and Houghton’s (2001) research by directly ascertaining the subjects’ perception of the overall quality of their assigned definition. More specifically the researcher is attempting to identify the subjects’ perception of the *quality* of the cash flow statement, given their allocated definition.

The concept of *quality* for the purpose of this study relates to factors identified by researchers such as Jones et al. (1995) and within the New Zealand Framework as being instrumental in ensuring good communication of accounting information.

Jones et al. (1995) undertook a study to evaluate whether the introduction of AASB 1026, “statement of cash flows”, would lead to an improvement in financial reporting for decision-makers (p. 117). Deriving empirical data on this issue was seen by Jones et al., as critical in evaluating the AASB’s decision to replace the *fund statement* with the *cash flow statement*.

The questionnaire developed by Jones et al. (1995) covered a range of issues including whether the subjects believed the cash flow statement to be more relevant and reliable than the fund statement and whether operating cash flow was viewed as a superior measure of performance to operating profit.

Many of the qualitative qualities surrounding financial statements are described in the New Zealand Framework as the qualitative characteristics that make the information provided in financial statements “useful to users” (New Zealand Framework, Para 24). The areas considered within the New Zealand Framework include the financial statements’ understandability, relevance, reliability and comparability.

The New Zealand Framework states that “[i]nformation has the quality of reliability when it is free from material error and bias and can be depended upon by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent.” (Para. 31). Other authors have defined the “quality” of the cash flow statement (e.g., Lee 1981b, 1983, 1984 and Lee et al., 1999) as a construct of several key components, including clear interpretive meaning (not ambiguous or imprecise), and a reduced susceptibility to creative or aggressive reporting techniques.

Task (4) presented the subjects with a series of four statements pertaining to the consistency, preciseness, ambiguity and comparability of the definition of “cash” presented, in relation to the financial statements. Using a 5 point Likert scale the subjects were required to indicate the degree to which they agreed or disagreed with the statements presented.

The application of a means comparability test with an Analysis of Variance (ANOVA) test for significance should provide further evidence of the impact of the change in the definition of “cash”. The results of this task will help extend the existing literature in the area of decision usefulness and provide useful information for standard-setters when considering the resulting impact of the move to NZ IAS 7.

The basic format for Tasks (1) to (3) were based on that used by Hronsky and Houghton (2001), redesigned to meet the requirement of the current research questions, and modified to incorporate some key suggestions provided by Dillman (2007) involving wording, layout and administration. The final instrument was pilot tested on 122 third year accounting students studying accounting theory at the University of Canterbury. In an experimental setting, the group was randomly split into two groups, each receiving one of the two definitions of “cash” (FRS 10 or NZ IAS 7).

Feedback on the instrument was subsequently solicited resulting in several minor amendments to both the layout and instructions. A final draft was forwarded to three senior academic staff within the Accountancy, Finance and Information Systems Department at the University of Canterbury, resulting in two further minor changes (mainly to do with instructions). The final instrument was then converted to HTML programming code and operationalised as a web page URL (Uniform Resource Locator) for on-line administration. This web based survey instrument was then tested by two further academic staff ensuring that the final live instrument was operational and user focused.

4.4.2 Administration

The current research utilised the e-mail and internet system to request, administer and record the information pertaining to the research instrument. Even though the successful use of the Internet as a data collection tool has been well documented in literature (e.g., Couper, 2000) this is the first study conducted in the area of measurement of meaning in accounting to utilise an on-line research method for administration of a research instrument. A recent advocate of this method of data collection is Dillman (2007) who believes researchers are witnessing an astonishing development in survey methodology. He drew comparisons of the move to internet based research instruments as having as profound an effect on research as that of random sampling in the 1940s and telephone interviewing in the 1970s. Dillman accepts that the use of electronic survey methods has the potential to bring "...efficiencies of comparable importance to the design and administration of self-administered questionnaires" (p. 352).²⁹ The efficiencies referred to by Dillman include a reduction in paper, facilities, mail-out and data entry costs and time, as well as a significant reduction in response and data processing times, all of which have the potential to positively change the relationship between sample size and survey costs.

While support for internet based surveying has increased significantly over the past decade (Couper, Traugott and Lamias, 2001; Dillman 2007), some concerns have

²⁹ Electronic survey methods include the use of e-mail, the World Wide Web and Interactive Voice Response (IVR) (Dillman, 2007, p. 352).

been raised regarding data quality (Couper, 2000). A concern of this study is the possibility of increased *non-response bias* which is the possibility of data bias caused by a survey instrument not successfully gaining a response from all of the subjects included in the sample. While this concern is also evident in many other self selection survey methods (e.g., Dillman, 2007, discussed the issue of non response bias in mail-out surveys) the use of the Internet has intensified the problem due to the potentially large number of issued requests, where the frame (desired) population is not defined.

Groves and Couper (1998), interpret non-response bias as "...a function of both the rate of non response and of the difference between respondents and non respondents on the variables of interest." (p. 473). In the case of internet surveys this bias is often difficult to define as the total number of the sample group is unknown due to the use of open invitation surveys distributed through a generalised web portal.³⁰ However, in the case of certain e-mail solicited surveys the frame population can be identified and therefore the non-response rate can be defined.³¹ This assists the researcher when considering the impact of subject participation on the sample data.

The current survey instrument was administered by way of an e-mail-based survey request which was forwarded to the subject groups by a group of intermediary bodies.³² The e-mail contained an introduction to the research followed by an embedded URL link (see Appendix B). The URL directed subjects to an on-line questionnaire specific to the financial reporting group classification and their assigned definition of "cash". This necessitated a total of six separate web-based instruments (two definitions x three financial reporting groups) which were hosted on a University of Canterbury web server, providing a higher level of security for the recorded data (see Table 4.1).

³⁰ Open invitation surveys are those surveys issued to a wide undefined frame population (Couper, 2000, p. 473).

³¹ Participants are contacted by e-mail and invited to participate in the survey. In this instance the researcher knows the number of invited participants as they will have detailed e-mail addresses.

³² NZICA, KPMG, PricewaterhouseCoopers, Ernst & Young and CFA.

Table 4.1

Web-based instrument

Financial Reporting Group	Old Definition (Group A)	New Definition (Group B)
<i>Preparers</i>	1	2
<i>Auditors</i>	3	4
<i>Users</i>	5	6

Subjects were randomly assigned to groups A and B based on subject lists (sample frames) obtained from NZICA, the CA firms and the CFA. For example, the total potential auditor population consisted of 155 auditors across the three CA firms. Each firm was instructed to randomly split their sample group into two halves and forward the researcher-supplied e-mail that contained the link to the web-based instrument relevant for each specific definition group. To ensure consistency of results, an equal number of both survey A and survey B were distributed across each of the three financial reporting groups. There appeared to be no significant difference between the response rates of group A and group B for all three financial reporting groups.³³

The e-mailed survey request was forwarded through the participating organisations. Each had been contacted 10 weeks earlier and had agreed to participate in the survey distribution process. Of the original six organisations contacted five agreed to provide assistance.³⁴ The benefit of utilising intermediary bodies is their ability to contact the required target subjects (those that met the criteria for inclusion in the study) directly using either their internal intranet system (as in the case of the CA firms) or e-mail addresses provided by their members (as in the case of NZICA and the CFA). This potentially has a twofold effect of firstly, improving the response rate and secondly, increasing the likelihood of selecting eligible subjects.³⁵

³³ Response rates from survey A and B represented 27.7% and 32.5% for Preparers, 44.8% and 42.3% for Auditors and 42.5% and 48.3% for Users, representing less than a 5% variance between each definition group.

³⁴ Deloitte quoted time constraints of potential audit subjects as non participation rationale.

³⁵ Only five subjects were omitted from the original sample group due to a lack of eligibility, two from the audit group and three from the preparer group.

The use of intermediary bodies has been accepted by Dillman (2007) as a suitable way to increase the level of acceptance to participate in surveys. This has the potential to increase the overall response rate and lower non response error. The effect of this strategy cannot be tested in this study as no other method of survey distribution was undertaken. However, response rates for all three financial reporting groups were adequate.

The research request for the first financial reporting group, preparers was administered by NZICA. The second subject group, auditors, was distributed by the audit secretary from each of the CA firms surveyed, while the third group, users, was distributed by the President of the CFA. These parties were seen by the researcher as the most appropriate organisations for targeting each of the three desired financial reporting groups.

An incentive was used to encourage participation in the research.³⁶ This involved a prize draw which was held the day after the closure of the web-based survey (at the end of week two). Each potential subject was made aware of the prize draw by notification in the introductory contact e-mail and in the opening page of the survey instrument. Subjects who wished to be entered in the draw were asked to provide contact details for prize notification. It was the only non-compulsory question in the research instrument and was the last task required prior to subjects “*submitting*” the survey on-line.

To prevent breaching the anonymous nature of the survey, the contact details (where supplied) for each subject were separated at the time the data was “*submitted*” to the web-server and the information was kept separate up until the prize draw, after which time it was deleted.³⁷

³⁶ The use of incentives has been well documented in the literature as an effective way of increasing the response rates of self selection (voluntary) surveys (Birnbaum, 2000).

³⁷ Of the total 175 respondents, over 95% provided some form of contact detail.

4.4.3 Sample size

The data analysis tool used in this study is *factor analysis*. In order to extrapolate the results of factor analysis to a wider population the researcher must establish the stability of the emerging factor pattern. It has been well established that factor stability is somewhat dependent on the sample size being adequate to achieve statistical significance (DeVellis, 2003). Hair et al. (1998) comments on the importance of sample size, noting it as:

“...perhaps the most influential single element under the control of the researcher in designing the analysis. The effects of sample size are seen most directly in the statistical power of the significance testing and the generalizability of the results” (p. 164).

As with many statistical procedures, there appears to be no consensus in the literature as to the optimum sample size which raises the key question: *what is the appropriate sample size for the current research?* Unfortunately, researchers have found it difficult to develop any suitable method to define the *correct* sample size for factor analysis as no reliable ratio can account for the non-linear relationship between the number of factors under examination and the number of subjects required (DeVellis, 2003). However, DeVellis (2003) suggests that “[the] larger the number of items to be factored and the larger the number of factors anticipated, the more subjects should be included in the analysis” (p. 137).

Tinsley and Tinsley (1987) suggested a ratio of 5 to 10 subjects (up to about 300 subjects) per item being tested. However, DeVellis (2003) argued that in the case of a desired replication of a given factor structure (as in the current study) the sample size of the original analysis plays an important part in that replication. Therefore, while a larger sample would have the effect of increasing the generalisability of the conclusions reached “...replicating a factor analytic solution on a separate sample may be the best means of demonstrating its generalisability” (DeVellis, p. 137).

Sample sizes which produced the three (EPA) factor structure observed in most measurement of meaning studies in the accounting domain, range significantly from approximately 40 subjects (20 per subject group) in Hronsky and Houghton (2001) to 741 usable responses (spread over seven subject groups) by Oliver (1974). Hronsky and Houghton accepted that their sample size was small but felt it adequate based on the fact that the results confirmed/replicated the standard EPA structure first identified by Osgood et al. (1957). Houghton (1987a) had earlier used total subject groups of between 22 and 28 in his study when analysing the accounting term “true and fair view”. Houghton postulated that:

“...whilst the number of subjects are small they are larger than the non-student groups used by Haried (1972) (who had only eighteen accountants and sixteen investment-club members) and they are consistent with the numbers used in most groups in Haried (1973) (eight of the 10 groups averaged just over 31 subjects)” (p. 146).

While the author of this study believes this justification to be weak, it is agreed that the replication of the three factor structure would support a relatively low sample size, but not as low as that used by Hronsky and Houghton (2001).

For the current study a sample size of seven subjects per semantic scale item was the target, resulting in a target total of 154 subjects (seven subjects x 22 scale items). Based on an estimated 35% response rate, a total of 442 subjects were contacted by e-mail requesting participation in the study. Each subject was randomly chosen from the following sources:

- the registered members of NZICA who had indicated a willingness to participate in research projects and were registered as being in an appropriate accounting decision making role;³⁸
- the employee lists of the three representative CA firms, who had the required experience;

³⁸

When members of NZICA fill out their membership form they indicate whether they are willing to be contacted for participation in surveys. Only these subjects were contacted.

- all registered members of the CFA who are actively employed.

The response rate for each subject group can be seen in Table 4.2 below and has been further broken down into definition groups A and B (A represents those who received the old definition of “cash” and B represents those who received the new definition of “cash”). While the response rates varied across the three financial reporting groups a 39% total response rate produced a satisfactory number of subjects to undertake the required factor analysis.

Table 4.2

Response rate for all three financial reporting groups

Subject Groups	Total e-mails sent	Subgroup	Subgroup	Total Responses	Total Response Rate
		A Response	B Response		
Preparers	124	27	30	57	46%
Auditors	156	35	33	68	44%
Users	166	23	27	50	30%
TOTAL	446	85	90	175	39%

Of the total sample group of 175, only five individual subjects were deemed unusable as they failed to meet the required criteria for eligibility. The researcher believes this low rate of unusable responses helps support the use of intermediary organisations for distribution of the survey as eligibility is clearly defined at the outset and only those subjects are then targeted for participation.

4.5 Analysis

The data analysis stage of this research is divided into four parts. The first part involves an analysis of the measurement of connotative meaning data obtained from

the semantic differential technique, as provided by Task (1) of the research instrument. The aim of this analysis is to establish and label the underlying factor structure (cognitive structure) for the data and provide the basis from which intragroup and intergroup comparisons can be made.

The second part deals with the analysis of the decision outcomes in response to Task (2) (the indication of whether or not each case presented is an item of cash) and Task (3) (the degree to which the subject believes the cases listed in the instrument represent an item of “cash”).

The third part deals with the connection between the measured meanings established in Task (1) and the decision outcome(s) observed by Tasks (2) and (3). It is this analysis that provides the most vital evidence of the relationship between these variables.

The fourth and final part looks at the items tapping subject’s perceptions about the overall quality of the assigned definition of “cash”, establishing a suitable method from which this process can be undertaken.

4.5.1 Cognitive structure

Experimental research by nature requires the identification of a suitable measurement basis from which data can be observed and tested. While the semantic differential provides the appropriate scale for recording subject responses, *factor analysis* is used to discover the *cognitive structure* for each subject group.

Factor analysis is a statistical measure used to reduce information so that any variation in the data set can be more precisely explained. Its primary function is to help an investigator determine “...how many latent variables underlie a set of items” (DeVellis, 2003, p. 103). Understanding the latent variable relationship allows the cause of variations to be identified within a given set of items. The latent variable

can be described as the actual phenomenon or construct that is of interest to a researcher, even though it is not specifically observable.

An example of the concept of latent variable presented by DeVellis (2003) is that of "...parents' aspirations for their children's achievement" (p. 14). While this may be the key area of interest to a researcher, it cannot be directly observed due to the variability over time (e.g., through the different stages of the child's development), place (e.g., on an athletic field versus a classroom), people (e.g., by different parents with different educational backgrounds), or many combinations of these and more. In this case the latent variable, *parents' aspirations*, is trapped within an established data set. This is often desirable as researchers are generally interested in constructs rather than items or scales per se. Given the complexities surrounding actual observed data sets, factor analysis is a helpful statistical method for identifying and observing the relationship between the scale(s) and the latent variable(s).

In the accounting measurement of meaning context, factor analysis is used to determine the latent variables (factors) underlying subjects' responses on the 22 item semantic differential. The number and nature of these factors represent the subjects' cognitive structure with respect to the particular accounting term or concept under examination.

In accounting measurement of meaning studies, determining cognitive structure via factor analysis generally consists of a four step process. The first involves the establishment of a preliminary solution (initial factor scores), which is based on the intercorrelations among the observed variables. The initial factor scores are established by running a principal component factor analysis (with varimax rotation) on the total data set (all financial reporting groups for both definition groups). The statistical software package SPSS was used for this process and for all other analyses in this study.

Having extracted an initial solution, step two in the process requires factors with eigenvalues greater than 1.0 to be selected and then subjected to a scree test (step three) and subsequent factor comparability test (step four). This process helps to establish the final number of factors to be used in the analysis and interpretation stage of the study by identifying the few most influential sources of variation underlying a set of items. While the remaining items provide a parsimonious account of the represented factors they should relate strongly to a small number of latent variables.

Kaiser (1960), as cited in Everett, (1983), endorses the use of the eigenvalue greater than 1.0 rule. This rule is based on the rationale that a value of less than 1.0 would indicate that the factor contains less information content than the average item in the data set.

The scree test (Cattell, 1966) used in step three is also based on eigenvalues but focuses on their *relative* position amongst the resulting eigenvalues as opposed to their *absolute* values. Cattell indicated that the establishment of the correct number of factors can be found at the point where the plotted eigenvalues associated with each successive factor reaches the change in plotted direction (or “elbow”) on a chart. Houghton (1988) describes this change as “...the cut-off point...where the rate of change in the eigenvalues decreases sharply” (p. 270). At this point the information content of each factor is said to have dropped to a point where a further number of factors explain “...very little difference” (p. 270) from prior factors. For example, eigenvalues calculated under the scree test may be 5.0, 3.5, 2.0, 1.0, 0.95, 0.93, 0.89 etc. The “elbow” is at the fourth factor where the eigenvalue begins to diminish by less than 0.50 of the scale (i.e., 0.95, 0.93, 0.89 etc). Cattell’s criterion requires factors to be retained where they lie *above the elbow*.

It is generally agreed that steps two and three can often result in the acceptance of too many factors (Everett, 1983, p. 187). A solution to this problem was established by Everett and Entekin (1980), who developed the more rigorous *factor comparability test* (step four). While originally designed to test between-group (intergroup) comparability Houghton (1988) endorsed the suitability of this method for within-

group (intragroup) testing and is supported in a number of subsequent studies (e.g., Houghton and Messier, 1991; Houghton and Hronsky, 1993; Bagranoff et al., 1994; Hronsky and Houghton, 2001; Wines, 2006).

Factor compatibility is determined by using a split-half test which involves randomly splitting the original (in the current research, total) data set into two halves. Each half is then subjected to identical factor analysis (with varimax rotation). Everett and Entrekin (1980) describe the purpose of this process stating that:

“The two sets of factor scores coefficients can be used to calculate a duplicate set of factor scores for each respondent (with one set of scores being based on score coefficients calculated from the factor analysis of his own set of respondents, and the other set of scores deriving from the factor analysis of the other set of respondents).” (p. 166).

The two sets of factor scores are compared by cross correlating the duplicate factor scores (Wines, 2006, p. 102). Nunnally (1978) supported this approach suggesting that “[t]he correlation between these two sets of factor scores could be used to judge the comparability of factors in the analysis of the same variable as different groups of subjects” (p. 433). Comparability is said to exist when all factor(s) are robust and stable as indicated by comparability coefficient scores of >0.894 .³⁹ This is determined through an initial process of specifying the number of factors to be extracted, starting with the number of factors determined in step three, reducing by one factor each time until significance is achieved for all identified factors.⁴⁰ Practically, this can be achieved by selecting the largest value in the resulting factor matrix, deleting its row and column, then repeating the process until all the rows and columns are deleted from the matrix (Everett, 1983). If significance is not observed for all identified factors then the process must be repeated with a reduced number of factors being specified.

³⁹ Everett and Entrekin (1980) had originally indicated significance to exist with a correlation coefficient threshold of 0.80. However, later research adopted a cut-off of 0.894, effectively increasing the level required to establish a robust and stable factor structure (Houghton, 1987a and b, 1988; Houghton and Messier, 1991; Hronsky and Houghton, 2001 and Wines, 2006).

⁴⁰ Using SPSS the researcher can specify the number of factors to be extracted.

If step four confirms factor comparability between the split halves, then the *nature* of the stable factors can be determined by examining the loadings of semantic differential items on each factor. This process is termed “factor labelling” and is discussed in the next section.

Not only can the fourth step outlined above be used to establish the factor (cognitive) structure for a total sample, it may also be applied between subsamples (such as between financial reporting groups in the current study). If the number of stable factors identified in steps one to four are the same for each of the three financial reporting groups then a further test for between group factor comparability is required to assess the degree of correlation between the factor scores of each group. This is required as while the number of factors may be identical for the total group they may not be similar in *nature* (Houghton, 1988).

If pairs of financial reporting groups are found to have similar cognitive (factor) structures, then valid between group comparisons can be made regarding their relative position of the definition of “cash”. However, if a shared cognitive structure is not identified for any of the pairs of the financial reporting groups, then all further analysis must be undertaken separately for each of the three financial reporting groups. This result would address research question (1): do preparers, auditors and users share the same cognitive structure for the meaning of the concept “cash”, as it relates to the cash flow statement?

4.5.2 Factor labelling

Once the number of stable factors has been identified for a particular group, an analysis of the scale items which load onto those factors is required to help further define the factors. This is referred to as “factor labelling” which requires the researcher to assess each of the heavily loaded scales and determine the commonality of their nature (Houghton, 1988).

The labelling of factors is achieved by firstly identifying those scales which load heavily (greater than 0.5) on the factor(s), then observing the relationship of the factor scores to the scales presented in the research instrument. While it is understood that some degree of subjectivity exists when labelling factors, the similarities of factor loadings observed by Osgood et al. (1957), Houghton (1988), Hronsky and Houghton (2001) and Wines (2006) provides some evidence of consistency with prior research. However, given Osgood et al.'s belief that connotative meaning can be explained (in part) within a three (EPA) factor structure, the existence of a lesser number of robust and stable factors could indicate a deviation from this prior literature.

An explanation of the latter provided by Houghton (1988) is that differences in factors may be a reflection of the domain of interest under examination, in that some terms and concepts within the field of accounting may carry different connotative implications to relevant parties to the accounting process than they would to the general public. This issue was also considered by Osgood et al. (1957) who suggested the possibility that the semantic differential technique may require adjustment to cater for different areas of study (p. 72).

Oliver (1974) discovered that when applying Osgood et al.'s (1957) scales to test different accounting concepts, the scales sometimes shift from one factor to another. Other researchers (e.g., Haried, 1972, 1973; Flamholtz and Cook, 1978; Wines, 2006) also observed some deviations from Osgood's et al.'s original EPA factor structure when dealing with differing sophistication levels between subjects. The less sophisticated the subject group, the more likely they would demonstrate a simpler factor structure.

This outcome is anticipated in the current study as the three financial reporting groups represent two levels of sophistication. The preparer and auditor groups are believed to be similar in that they have a closer relationship to the concepts under examination than the user group. They also have very similar education and training requirements, whereas members of the CFA may have come from a range of professional

backgrounds. Given the possible differences in sophistication it is anticipated that the final factor structure will be different for at least one of the three groups.

Flamholtz and Cook (1978) described the identified factors as the axis upon which the dimensions of meaning are held. Therefore, labelling these axes will help define the semantic space in which the concept of “cash”, as it relates to the cash flow statement, is located, which is a prerequisite to exploring the relationships of the concept in that semantic space.

4.5.3 *Factor placement*

The determination of the *number* and *nature* of factors held by each financial reporting group is fundamental in determining the degree of shared cognitive structure (Houghton, 1988). While this describes the similarities in the way the groups hold meaning within the accounting domain, it is the *placement* of the concept within the shared cognitive structure that addresses the measurement of meaning (Houghton and Hronsky, 1993).⁴¹

This is addressed by research question (2): is there any difference in the meaning of the concept “cash”, as it relates to the cash flow statement, as interpreted between the preparer, auditor and user financial reporting groups? The format of this analysis is dependent upon the *number* and *nature* of stable factors identified under Section 4.5.2 above and the degree of comparability between the three financial reporting groups. That is, analysis of possible differences between the two definition groups across each of the financial reporting groups is dependent upon the extent to which the three groups can be treated as having the same cognitive structure of meaning.

If the results of the inter group factor comparability test indicate that all three groups share the same *number* and *nature* of factors then the total sample will remain as one main group (with two definition groups contained within) and the research can proceed to research question (3): is there any difference between the meaning of the

⁴¹ Placement refers to the mean score for each factor.

concept of “cash”, as defined under FRS 10 and NZ IAS 7, held within each of the three financial reporting groups?

If only two of the groups are comparable then there will be two separate groups. If comparability does not exist between the three financial reporting groups then each financial reporting group will be tested separately for the remainder of this research.

Determining significant changes in factor placements brought about by the new definition of “cash” requires the application of an ANOVA. Here any possible differences in connotative meaning between the two definition groups can be tested by determining the significance of difference in their relative *placement* on the factor structure. Any change in that placement is plotted on the axis (the factors), indicating both the degree and direction of the change. If the results of the factor comparability test result in two or more stable factors, then the structure within which the meaning of the concept is held is believed to be multidimensional.⁴² A single factor structure would indicate a simpler and arguably “undimensional” structure of meaning (Houghton, 1987, p. 146).

Changes in factor placement can be described as the change in semantic space in which meaning is held (Houghton, 1988). Interpretation of any observed changes helps define the extent of any change in connotative meaning between each definition group and their prompted definition. The analysis process requires a review of the placement movements, looking at the underlying scales which have been instrumental in that movement. By reviewing the scales within each factor an understanding of the resulting change in meaning can be inferred.

4.5.4 *Decision outcomes*

The second and third tasks of the research instrument required subjects to review 10 types of current assets (defined as “cases” for the purpose of this study) and determine

⁴² In the case of Osgood et al. (1957), the structure within which meaning is believed to be held was three dimensional (EPA). This three dimensional structure of meaning has been confirmed by Houghton (1988) and Hronsky and Houghton (2001).

the extent to which they believed, based on their allocated definition of “cash”, the item represented “cash”, as it applied to the cash flow statement. Task (2) of the research instrument required a simple binary, “yes”, “no” classification, while Task (3) required them to rate the degree to which they believed each case represented an item of cash, using a 1 to 6 Likert scale (1 represented “cash” while 6 represented “not-cash”).

It is intended that the interchangeability of responses from these two decision tasks should confirm the validity of the responses in that each subject was required to address the yes/no decision before assessing the degree (1= clearly an item of cash to 6 = clearly not an item of cash) to which the specified item was, or was not, an item of cash (as it relates to the cash flow statement). This was conducted under experimental conditions by restricting the subjects from reviewing their decisions under Task (2) while completing Task (3). Therefore comparability of the responses from Tasks (2) and (3) is necessary to demonstrate consistency in response.

Comparability of this data is tested using an ANOVA, comparing the decision scores from Task (2) to the mean scores from Task (3). A high level of significance indicates consistency in the response to Tasks (2) and (3) and confirms the data’s suitability for further analysis. A failure in this area could indicate a limitation in the reliability of the data from Tasks (2) and (3).

If comparability is confirmed then further testing for differences in decision outcomes between the two different subgroups can be undertaken (between those subjects who were prompted by the old definition of “cash” and those prompted by the new definition of “cash”). An ANOVA is applied to the responses generated under Task (3) for each financial reporting group, testing for significance in differences in mean scores between each subgroup (i.e., between preparer group one and two, auditor group one and two, etc). This addresses research question (4): do the two different definitions of the concept “cash” presented in FRS 10 and NZ IAS 7 result in the preparer, auditor and user reporting groups making different decisions?

4.5.5 *Decision outcomes and measured meaning*

This part of the data analysis process provides critical information about the relationship between the meanings attributed to the defined concept “cash” and the decision outcomes resulting from those definitions. This addresses research question (5): are the decision outcomes in each of the 10 cases related to the measured meaning of the concept of “cash” held by each of the three financial reporting groups?

In the current study, a significant relationship could support the proposition that the decisions made by a subject group can be explained (in part) by their connotative meaning of the concept under examination. As the dependent variable (case decisions) responses are categorised and scaled from 1 to 6 the use of ordinal probit regression analysis is seen as the best method to help explain a higher proportion of variance (Houghton and Hronsky, 2001). This involves combining the variability in the measurement of meaning established under Task (1) with the decision outcomes under Tasks (3).

An ordinal probit regression allows the researcher to model the dependence of the many subparts of ordinal response (the case classification decisions) against the established factor scores. The relationship between the factor scores identified for each subject’s response, and their individual decisions regarding the cash and non cash items noted in the 10 cases, can be seen as a function of how much, on average, the decision changes as a result of the different decision rules (the two definitions) (Hronsky and Houghton, 2001).

This approach is consistent with prior measurement of meaning research where decision outcomes have been regressed against the factor score (Hronsky and Houghton, 2001 and Wines, 2006).

4.5.6 *Definition quality*

Task (5) of the research instrument allowed the researcher to assess the subjects’ perception of the *consistency, preciseness, level of ambiguity and comparability*

(defined as “quality” for the purpose of this study) of the definition of “cash” which they had been allocated. The purpose of this task was to provide further data which may contribute to the overall conclusions discussed in Chapter 6 regarding the impact of a change in definition of the concept “cash”, among the three financial reporting groups. This is an extension to the existing literature as no other study has included a specific task addressing the perceived quality of a definition within the measurement of meaning research.

Subjects were required to review their allocated definition of “cash”, as it relates to the cash flow statement, and consider four statements regarding that definition (see Appendix A, Task 4). Using a 5 point Likert scale subject’s rate their response to each question posed, providing answers that ranged from strongly agreed (1) to strongly disagree (5). Statement (2) was reverse scored to minimise attention deficiencies among subjects.

A comparison of the mean responses on each statement across the two definition groups provides the bases for assessing changes in perceived *quality* of the allocated definition. An ANOVA will define the significance of any noted change between the two definition groups which addressed research question (6): has the new definition of cash, established under NZ IAS 7, improved the *quality* of the cash flow statement, as perceived by the three financial reporting groups?

4.6 Summary

The purpose of this chapter was to establish the method used in the current study and discuss the general experimental process identified for this study.

A web-based experiment was identified as a suitable method to administer and record the survey responses for the current study. Four hundred and forty-six requests for participation were sent by e-mail through intermediary bodies, netting a total of 175 responses, of which 170 were usable. This represented a 38% response rate which provided a suitable sample size for the data analysis stage.

The research instrument contained four tasks, ranging from the completion of a 22 item semantic differential used by Hronsky and Houghton (2001), 10 cases regarding classification decisions relating to the definition of “cash” and a final task addressing the subjects’ perception about the *quality* of the cash flow statement (given their allocated definition of “cash”). Each task addressed a specific research question and, with the exception of Task (4), had been validated in prior research.

The initial stage of the analysis involves the use of factor analysis in combination with the more robust factor comparability test which is used to establish the comparability of cognitive structures for the three financial reporting groups. The use of an ANOVA provides a suitable method to test possible influence of the different definitions on the factor scores (factor placements). This provides the basis for measuring the changes in connotative meaning resulting from the change in the definition of the concept “cash”.

Once the validity of the data from Task (3) has been established, an ANOVA is used to test the influence of the two definitions on the decision outcomes. The factor placements from Task (1) are then regressed on to the decision outcomes from Task (3) using ordinal probit regression. This allows the researcher to address research question (5), looking at the association between the measured meaning and the decision outcomes.

The final stage of the analysis process will look at the possible changes in perceived *quality* of the definition of the concept “cash”. Using a means comparability test and an ANOVA, the researcher will gain information required to address research question (6).

The following chapter discusses the results of the analysis stage.

Chapter 5

Results

5.1 Introduction

The following chapter outlines the results of data analysis and discusses the relevant findings in relation to the research questions established in Chapter 2. This will be undertaken in seven sections, with the first section looking at the cognitive structure of meaning followed by a section on the factor labelling process in Section 5.2.

Factor placements for each financial reporting group are then investigated in Section 5.3, considering both the change in factor scores and then undertaking an ANOVA in order to assess the significance of any change in factor loadings on each scale of the research instrument.

Section 5.4 details the results of the cases involving the decision outcomes, allowing for the results of the factor scores established in Section 5.3 to be compared with the results established in Section 5.4. The results of the relationship between the decision outcomes and the measure of meaning are presented and discussed in Section 5.6.

Finally, Section 5.7 reviews the results of the means comparability test and ANOVA from the items addressed in Task (4) of the research instrument, looking at the overall *quality* of the two definitions of “cash”. A summary is then provided in Section 5.8, leading to a discussion in Chapter 6.

5.2 Cognitive Structure of Meaning

5.2.1 Cognitive structure of total group

A prerequisite to understanding the relationship of connotative meaning is the establishment of the dimensions (factors) which are believed to underlie the meaning of the concept under investigation.

Table 5.1 presents the factor structure (after varimax rotation) for the three financial reporting groups, as well as for the total group. The identification of factors with eigenvalues greater than 1.0 resulted in a five factor structure (also referred to as factor solution) for the preparer and user group, and a six factor structure for the auditor group. A five factor structure was observed for the total group with over 25% of the variance being explained within the first factor, and over 40% by the first two factors.

Table 5.1
Factor analysis after varimax rotation

Factor No.	Preparers		Auditors		Users		Total Groups	
	Eigen Value	% Variance	Eigen Value	% Variance	Eigen Value	% Variance	Eigen Value	% Variance
1	7.343	33.378	5.531	25.143	7.411	33.685	6.110	27.772
2	2.688	12.219	3.295	14.978	3.056	13.889	2.804	12.745
3	2.530	11.498	2.143	9.743	2.485	11.297	2.701	12.278
4	2.315	10.524	1.934	8.789	1.847	8.396	1.787	8.124
5	1.473	6.693	1.657	7.530	1.458	6.629	1.337	6.077
6			1.483	6.740				

The stability and relevance of the total group's factor structure was tested by applying the simple scree test which resulted in a four factor structure for the total group. However, Everett (1983) argued that these two approaches often resulted in the acceptance of too many factors. Therefore, the application of the more rigorous *factor comparability test* established by Everett and Entekin (1980) helps establish a more robust and stable factor structure for application in the current research.

The factor comparability test was applied to the total group, producing two separate sets of factor scores (corresponding to each split half) for each iteration of the test. By specifying the number of factors to be correlated (starting with three factors and reducing by one factor each time) comparability was only achieved within a single factor structure (see Table 5.2).

Table 5.2

Factor comparability test of random split halves for total group

Number of Factors	Correlations between factor scores of random split halves		
3	.796	.005	.645
2	.865	-.227	
1	.998**		

** = Comparability (defined as a correlation of at least 0.894, (Everett and Entrekin, 1980))

The final factor matrix is presented in Table 5.3, identifying the *nature* of the single stable factor identified.⁴³ The factor score for each significant scale item has been identified using Osgood et al.'s (1957) three (EPA) factors structure. However while the process would normally focus on the labelling of the overall single identified factor, a single factor solution suggests a lack of meaningful shared cognitive structure between the three financial reporting groups (Houghton 1987). Therefore the examination of intergroup relationships (between all three financial reporting groups) within a single shared cognitive structure is not possible in the current study. In relation to research question (1), this suggests that the three financial reporting groups do not share the same sophisticated structure in which meaning of the concept “cash” is believed to be held.

⁴³

Due to the extraction of only a single factor, the solution cannot be rotated.

Table 5.3

Unrotated factor matrix for total group

Total Group

Scale	Factor 1	EPA
Indirect-direct	-0.783	
Unexpected-expected	-0.748	A
Discretionary-required	-0.746	
Variable-constant	-0.550	A
Passive-active	-0.509	
Temporary-permanent	-0.478	
Bad-good	-0.435	
Short term-long term	-0.221	
Static-dynamic	-0.002	
Controllable-uncontrollable	0.539	A
Necessary-unnecessary	0.545	P
Inflexible-flexible	0.548	E
Planned-unplanned	0.556	A
Beneficial-adverse	0.568	P
Safe-risky	0.769	E
Complete-incomplete	0.782	E
Objective-subjective	0.787	E
Real-imaginary	0.789	P
Exact-estimated	0.798	E
Measurable-unmeasurable	0.809	E
Tangible-intangible	0.812	E
Strong-weak	0.888	P

E = Evaluative

P = Potency

A = Activity

	= exceeds 0.50
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5.2.2 Within-group cognitive structure

Given the lack of a meaningful shared cognitive structure within the total group, further analysis is required in order to achieve two key objectives. The first is to confirm the lack of shared cognitive structure, suggested in Section 5.2.1 above, between each of the three financial reporting groups, and secondly, to assess the possible comparability of factor structure(s) for each group individually, allowing for

intragroup relationships (between each of the two definition groups within the three financial reporting groups) to be examined.

Table 5.4 presents the separate results of the factor comparability test for each of the three financial reporting groups. Once again, by specifying the number of factors to be correlated, comparability was achieved for all three financial reporting groups, however not within the same *number* of factors (as would be expected from the results of Section 5.2.1 above). The factor reduction process applied by Everett and Entrekin (1980) indicates the adoption of a stable *two* factor structure for the preparer and auditor financial reporting groups and a single stable factor structure for the user group.

Table 5.4

Factor comparability test of random split halves for reporting groups

Group	Correlations between factor scores of random split halves			
<i>Preparers</i>				
No. of factor = 4	.718	.778	.0883	-.206
= 3	.653	-.100	.893	
= 2	.918**	.923**		
<i>Auditors</i>				
No. of factor = 4	.807	.607	.599	-.588
= 3	.928	.536	.372	
= 2	.941**	.976**		
<i>Users</i>				
No. of factor = 4	.915	-.689	.731	.285
= 3	.824	.787	.382	
= 2	.883	.816		
= 1	.996**			

** = Comparability (defined as a correlation of at least 0.894, (Everett and Entrekin, 1980))

The aforementioned results help confirm the conclusion alluded to in Section 4.2, that all three financial reporting groups do not share the same cognitive structure. It also establishes the *number* of stable factor(s) for all three financial reporting groups which is required for further intragroup examination.

5.2.3 Cognitive structure of preparer and auditor groups

While it is clear that the user financial reporting group is not comparable with the remaining financial reporting groups, investigation into the comparability between the preparer and auditor groups' factor structure is still required. Although both the preparer and auditor groups resulted in the same *number* of factors (two) comparability only exists when the *nature* of the two factors are also similar (Houghton, 1988).

From Table 5.5 it appears that the two factors identified by the subjects of these two groups are not highly correlated, and therefore it would not be suitable to assume a shared cognitive structure (and therefore shared meaning).

Table 5.5

Factor comparability test between preparer and auditor groups
Correlation between factor scores of preparer and auditor

	1	2
Preparer/auditor	.876	.049

Given the results, the research will now proceed on the basis that *all three financial reporting groups* have different cognitive structures and therefore can be viewed as three separate factor groups (preparers, auditors and users). Therefore, research question (2) (intergroup differences in measured meaning), cannot be addressed within this research.

5.3 Factor Labelling

Labelling the identified factor(s) for each reporting group requires an investigation into the factor loadings of each scale item represented on the semantic differential. Consistent with prior research (e.g., Houghton, 1988; Hronsky and Houghton, 2001; Wines, 2006) those scales with factor loadings greater than 0.5 are identified and

labelled according to Osgood et al.'s (1957) three (EPA) factor structure.⁴⁴ However, as only two stable factors were established for the preparer and auditor groups (although different factors) and only one for the user group, the results vary somewhat from Osgood et al. and Houghton's (1988) factor classifications.

The factor scores attributed to each of the scales are presented in Tables 5.6, 5.7, 5.9, 5.10, and 5.11 along with a summary of all groups in Table 5.12. To help understand the factor labels and their relevance to the current study a discussion by financial reporting group is provided.

5.3.1 Preparers

Tables 5.6 and 5.7 present the two stable factors identified in Table 5.4 above, along with the individual factor loadings (by identified factor) for each scale represented on the semantic differential. The labelling of the two factors requires an investigation into the individual factor loadings, the scales they represent and the attributed EPA labels identified by Osgood et al. (1957).

Preparers - Factor 1

Table 5.6 presents the factor scores for the first factor (1). This contains scales that have both Evaluative and Potency dimensions. The discretionary-required, unexpected-expected, objective-subjective and safe-risky scales represent the Evaluative scales. The other scales that loaded highest included: strong-weak, tangible-intangible, indirect-direct and exact-estimate, and represent the Potency scales. The Potency scale items accounted for seven of the total 15 significant items identified for factor (1) and dominated the factor loadings for all items (loading between .809 and .932).⁴⁵

⁴⁴ The three (EPA) factor structure was also confirmed for suitability in accounting research by Haried (1972) and Houghton, (1988).

⁴⁵ Significances for the purpose of this discussion means 0.50 as established by Everett and Entrekkin (1980)

Table 5.6

Rotated component matrix (preparers – factor 1)

Preparers

Scale	Factor 1	EPA
Indirect-direct	-0.847	P
Discretionary-required	-0.788	E
Unexpected-expected	-0.780	E
Passive-active	-0.486	
Bad-good	-0.456	
Temporary-permanent	-0.451	
Variable-constant	-0.287	
Short term-long term	-0.220	
Static-dynamic	-0.146	
Inflexible-flexible	0.247	
Beneficial-adverse	0.640	E
Necessary-unnecessary	0.662	E
Planned-unplanned	0.682	A
Controllable-uncontrollable	0.705	E
Safe-risky	0.736	E
Objective-subjective	0.754	E
Complete-incomplete	0.809	P
Measurable-unmeasurable	0.810	P
Real-imaginary	0.833	P
Exact-estimated	0.846	P
Tangible-intangible	0.870	P
Strong-weak	0.932	P

	= exceeds 0.50
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The Evaluative factor also accounted for seven of the total 15 significant scales but the factor scores were noticeably lower than the Potency scales (.640 to .740). While Osgood et al. (1957) suggested that "...the evaluative factor played a dominant role in meaningful judgement..." (p. 38) he also commented that the three dominant (EPA) factors do not exhaust the *semantic space* within which connotative meaning is

obtained.⁴⁶ They suggested that results may vary depending on the concept under consideration in a particular field of study (p. 79).

It is not surprising, given the concept under consideration, that the individual evaluative and potency scales load heaviest on the first factor (1). When considering the concept of “cash”, as it related to the cash flow statement, evaluative scales such as *safe*, *required* and *expected* are similar in effect to potency scales such as *strong*, *tangible* and *exact*. For example, the stronger the cash position of an organisation the safer it is assumed to be (financially speaking). Given the nature of the scales represented and the consistency to Wines’ (2006) results, factor (1) will be labelled EMPHASIS.

Preparers - Factor 2

Table 5.7 presents the factor scores for each scale for second factor (2). All significant scales are labelled as Activity, represented by scales such as inflexible-flexible, static-dynamic and variable-constant. Activity scales are said to have *temporal connotations*, or what is commonly referred to as *movements relating to time* (Wines, 2006, p. 102). This could explain the high loading on scales such as constant and static.

While the number of identified factors are small (three in total) the loadings indicate an overall stability in the concept under examination. Given the clear compliance with components of Osgood et al.’s (1957) original EPA labels, factor (2) will be labelled ACTIVITY.

⁴⁶ Osgood et al. (1957) found that the evaluative factors accounted for almost 70% of the common (extracted) variance observed (p. 39).

Table 5.7

Rotated component matrix (preparers - factor 2)

Preparers

Scale	Factor 2	
Variable-constant	-0.815	A
Temporary-permanent	-0.431	
Unexpected-expected	-0.245	
Controllable-uncontrollable	-0.229	
Necessary-unnecessary	-0.226	
Discretionary-required	-0.111	
Bad-good	-0.089	
Beneficial-adverse	-0.080	
Indirect-direct	-0.074	
Real-imaginary	-0.024	
Objective-subjective	-0.016	
Tangible-intangible	0.000	
Measurable-unmeasurable	0.045	
Exact-estimated	0.059	
Strong-weak	0.067	
Complete-incomplete	0.114	
Planned-unplanned	0.142	
Safe-risky	0.149	
Passive-active	0.289	
Short term-long term	0.334	
Static-dynamic	0.713	A
Inflexible-flexible	0.835	A

	= exceeds 0.50
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5.3.2 Auditors

The auditor financial reporting group also resulted in a stable two factor structure. However, given the lack of correlation between the preparer and auditor group factor scores (for each scale), it is anticipated that the individual factor loadings for each of the 22 scale items will be somewhat different for the auditor group in comparison to the preparer group.

Auditors - Factor 1

Table 5.8 presents the individual factor scores for each scale reported under the first factor (1). It would appear that this factor is less clear cut than those identified for the preparer group in that it identifies all three elements of Osgood et al.'s (1957) EPA structure. However, the most significant dimension in both number and factor loading is Potency, represented by scales such as, exact-estimate, measurable-unmeasurable, strong-weak and tangible-intangible.

The Evaluative structure was represented on three scales, objective-subjective, safe-risky and necessary-unnecessary. This could be explained by the high degree of common meaning associated with the concept "cash", in that subjects may gain a feeling of safety when dealing with the concept of "cash" (especially as the going concern issue is an important component to the auditors role). The more cash an organisation has, the safer it is assumed to be and the less concerned and auditor may be regarding the overall security of the business.

Table 5.8

Rotated component matrix (auditors – factor 1)

Auditors

Scale	Factor 1	
Indirect-direct	-0.493	
Discretionary-required	-0.489	
Unexpected-expected	-0.389	
Variable-constant	-0.381	
Bad-good	-0.301	
Passive-active	-0.250	
Temporary-permanent	0.031	
Short term-long term	0.032	
Planned-unplanned	0.258	
Static-dynamic	0.314	
Beneficial-adverse	0.431	
Controllable-uncontrollable	0.488	
Real-imaginary	0.508	P
Necessary-unnecessary	0.569	E
Inflexible-flexible	0.664	A
Complete-incomplete	0.674	P
Safe-risky	0.696	E
Tangible-intangible	0.720	P
Objective-subjective	0.798	E
Strong-weak	0.846	P
Measurable-unmeasurable	0.864	P
Exact-estimated	0.866	P

	= exceeds 0.50
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The results indicate a general lack of emphasis around concepts such as temporary-permanent and short term-long term. However, this may simply represent the subjects' lack of connection between the scales represented and the concept under examination. This issue was considered by Houghton (1987a) who believed that the scales may not always be suitable for a particular area of study and therefore may result in a lack of significant evidence of factor loadings.

For the purpose of this study, factor (1) will be labelled POTENCY. While the representative scales are few in number (six in total) the loadings indicate dominance within the Potency factor. Also, when assessing the identified Evaluative scales, it could be argued that those scales could also be seen by professional auditors as a representation of power, financial strength and influence (Potency).

The possibility of crossover in factor labelling was addressed by such authors as Houghton, (1987a, p. 148) and Wines (2006, p. 102) who also observed similarities in effect on different scales due to the concept under review and/or the subjects under examination. Therefore deviation from the tradition EPA factor structure is not uncommon in the accounting domain.

Auditors - Factor 2

While the second factor (2) is also not so clear, there does appear to be a stronger representation of the Activity label, represented by scales such as temporary-permanent, passive-active, variable-constant and short term-long term. This would indicate that the concept under examination carries connotations of permanency and constants among the auditor subject group which, given the investigative nature of the audit role, may be understandable. However they do not appear to load heavily on any of these concepts, ranging from .703 to .541.

Table 5.9

Rotated component matrix (auditors – factor 2)

Auditors

Scale	Factor 2	
Real-imaginary	-0.504	P
Safe-risky	-0.351	
Beneficial-adverse	-0.341	
Necessary-unnecessary	-0.307	
Complete-incomplete	-0.251	
Tangible-intangible	-0.230	
Controllable-uncontrollable	-0.222	
Strong-weak	-0.199	
Planned-unplanned	-0.137	
Objective-subjective	-0.083	
Measurable-unmeasurable	-0.052	
Exact-estimated	-0.025	
Inflexible-flexible	0.049	
Bad-good	0.422	
Static-dynamic	0.426	
Short term-long term	0.541	A
Variable-constant	0.558	A
Discretionary-required	0.560	E
Indirect-direct	0.575	P
Passive-active	0.619	A
Unexpected-expected	0.681	E
Temporary-permanent	0.703	A

	= exceeds 0.50
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The lower factors scores may indicate a less aggressive or more conservative approach to understanding the impact of the concept on the scales identified. However, given the consistency with the prior literature, this factor will be labelled ACTIVITY (see Houghton 1987a and 1988; Hronsky and Houghton, 2001).

5.3.3 Users

Although the user group did not result in Osgood et al.'s three (EPA) factor structure certain aspects were observed within the single factor identified. Given the specific nature of the concept under investigation ("cash", as it relates to the cash flow statement) the results would appear to be consistent with the results of prior research (e.g., Houghton 1988; Houghton and Hronsky, 1993) where less sophisticated subjects were involved.⁴⁷

Houghton and Hronsky (1993) found that the cognitive structure of study subjects tends to be less complex where they are seen as being less "expert" with respect to the concept under examination. The concept "cash", in the current context, has a strong accounting reference which may help support Houghton's position. Also, with only 20% of the user group subjects noted as qualified Chartered Accountants, compared to 100% for the preparer group and 89% for the auditor group, the results appear to support these earlier research findings.

Table 5.10 provides the factor loadings for each scale identified for the single factor (1). Of importance to this study is the fact that 17 of the 22 scales had factor loading exceeding the conventional 0.5 loading. This would indicate that for the user group the single factor structure remains appropriate for examining their connotative meaning of the concept "cash" (Wines, 2006).

⁴⁷ Sophistication relates to the level of understanding in the particular field of study (Haried, 1972 and 1973).

Table 5.10

Rotated component matrix (users – factor 1)

Users

Scale	Factor 1	
Indirect-direct	-0.794	P
Discretionary-required	-0.763	E
Unexpected-expected	-0.761	E
Variable-constant	-0.691	A
Temporary-permanent	-0.582	A
Passive-active	-0.572	A
Bad-good	-0.395	
Short term-long term	-0.255	
Static-dynamic	-0.004	
Necessary-unnecessary	0.389	
Controllable-uncontrollable	0.462	
Beneficial-adverse	0.522	E
Planned-unplanned	0.626	A
Inflexible-flexible	0.754	A
Safe-risky	0.783	E
Exact-estimated	0.788	P
Complete-incomplete	0.808	P
Real-imaginary	0.850	P
Measurable-unmeasurable	0.850	P
Tangible-intangible	0.861	P
Objective-subjective	0.887	E
Strong-weak	0.894	P

	= exceeds 0.50
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With the exception of three Evaluative scales, the seven Potency scales loaded highest out of the total 17 loaded scales identified. This is represented by scales such as strong-weak, tangible-intangible, measurable-unmeasurable and real-imaginary, which would appear to follow a similar position to that noted for factor (1) established for the preparer group. However somewhat different to the preparer group was the noticeable difference in Evaluative scales, representing five of the total 17 scales. Prior research (e.g., Houghton, 1989 and Houghton and Messier, 1991) recognised the Evaluative dimension of meaning in accounting to be representative of certain aspects

of “manageability (including expectations and assessment of risk)” (Houghton and Messier, p. 93). Therefore while loadings on the Evaluative scales are not high they still provide some explanation of the dimensions of meaning contained in this single factor.

Similar to the observations made surrounding factor (1) for the preparer group, the single factor for the user group is heavily dominated by both the Potency and Evaluative dimensions and is therefore labelled EMPHASIS. This is consistent with the findings of Wines (2006).

5.3.4 Summary of groups

Table 5.11 presents the factor loadings for each scale for all three financial reporting groups’ factors. With the exception of one scale, bad-good, all scales across the total group presented factor loadings greater than 0.5. Therefore this helps support the original works of Osgood et al. (1957), Haried (1972) and Houghton (1988) regarding the suitability of the semantic differential as an appropriate measurement method for concepts in accounting.

Regarding the bad-good scale items, it may be understandable that such an item would not appear appropriate given the current concept under investigation, in that it would be very limited situations where the concept of “cash” carries a bad connotative meaning.

Table 5.11

Rotated component matrix (total groups – all factors)

Total Groups

Scale	EPA	Preparer		Auditor		User
		Factors		Factors		Factor
		1	2	1	2	1
Planned-unplanned	A	0.682	0.142	0.258	-0.137	0.626
Variable-constant	A	-0.287	-0.815	-0.381	0.558	-0.691
Temporary-permanent	A	-0.451	-0.431	0.031	0.703	-0.582
Passive-active	A	-0.486	0.289	-0.250	0.619	-0.572
Static-dynamic	A	-0.146	0.713	0.314	0.426	-0.004
Short term-long term	A	-0.220	0.334	0.032	0.541	-0.255
Exact-estimated	E	0.846	0.059	0.866	-0.025	0.788
Bad-good		-0.456	-0.089	-0.301	0.422	-0.395
Necessary-unnecessary	E	0.662	-0.226	0.569	-0.307	0.389
Objective-subjective	E	0.754	-0.016	0.798	-0.083	0.887
Safe-risky	E	0.736	0.149	0.696	-0.351	0.783
Discretionary-required	E	-0.788	-0.111	-0.489	0.560	-0.763
Beneficial-adverse	E	0.640	-0.080	0.431	-0.341	0.522
Controllable-uncontrollable	E	0.705	-0.229	0.488	-0.222	0.462
Unexpected-expected	E	-0.780	-0.245	-0.389	0.681	-0.761
Measurable-unmeasurable	P	0.810	0.045	0.864	-0.052	0.850
Tangible-intangible	P	0.870	0.000	0.720	-0.230	0.861
Strong-weak	P	0.932	0.067	0.846	-0.199	0.894
Indirect-direct	P	-0.847	-0.074	-0.493	0.575	-0.794
Complete-incomplete	P	0.809	0.114	0.674	-0.251	0.808
Real-imaginary	P	0.833	-0.024	0.508	-0.504	0.850
Inflexible-flexible	P	0.247	0.835	0.664	0.049	0.754

	= exceeds 0.50
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5.4 Factor Placement

The identification of a single factor structure for the user financial reporting group indicates a simpler (and arguably “undimensional” (Houghton, 1987, p. 146)) structure than the factor structure identified by Osgood et al. (1957) while the preparer

and auditor financial reporting groups confirmed to a more complex (“dimensional”) structure, consistent to that of Wines (2006).

Given the similarities of professional qualification for the preparer and auditor groups the results for these two groups may be expected.⁴⁸ Also, the user group is believed to be less sophisticated with respect to the accounting concept of “cash”, which may help explain why a single factor structure has been identified.

The cognitive structure for each financial reporting group is shown to be both robust and stable. Therefore investigation into possible differences in meaning within each structure can now be undertaken for each reporting group. This issue is addressed under research question (3), which considers whether a significant difference exists between the measured meaning of the concept “cash” between those subjects who received the old definition and those who received the new definition. Given that the cognitive structure of each group is different, analysis in this area will focus on each financial reporting group separately. In other words, an intergroup analysis is not valid in the current situation.

Possible differences in meaning between the two definition groups (within a reporting group) can be tested by determining their relative *placement* on the factor structures identified in Section 5.2 and 5.3 above.⁴⁹ Movements attributable to the changing in deviation can be observed in Figures 5.1, 5.2 and 5.3, where the results of the mean comparability test presented in Table 5.12 are plotted onto the established factor axes (axis for the user group). The placement scores indicate the position of the concept “cash” for each group on the individual factor(s) axes identified. Movements in placements between the old and new definition provide evidence of both the extent (degree) and direction (movement along the axes) of the change in mean factor loadings. This change can be described as the change in semantic space in which meaning is held for each of the financial reporting groups (Houghton, 1988).

⁴⁸ Both are qualified members of the Chartered Accountants College of the New Zealand Institute of Chartered Accountants.

⁴⁹ Placement refers to the mean score for each factor. The factor scores are standardised with a mean of 0 (Houghton 1988).

Table 5.12

Placement of “cash” by financial reporting group

Preparers	Factor(s)	
	Emphasis	Activity
Old Definition	30	22
New Definition	-27	-20

Auditors	Potency	Activity
	Old Definition	49
New Definition	-52	5

Users	Emphasis
	Old Definition
New Definition	-60

An ANOVA on the factor scores for each definition group confirms that in the case of all three financial reporting groups significant differences were found for the first factor, Emphasis (for the preparer and user group) and Potency (for the auditor group) (see Table 5.13). A lack of significant differences is observed on the second factor for both the preparer and auditor financial reporting groups (Activity). However, given the observed difference in cognitive structure between all three financial reporting groups the interpretation must continue on a separate basis.

What can be concluded from these results is that, in part, the semantic differential technique is both capable and sensitive enough to measure the difference in connotative meaning between the old and new definition of the concept “cash” (within the identified financial reporting groups) (Houghton, 1988, p.275). This supports the results of many prior studies in the area of measured meaning in accounting (Houghton 1987a and b; Houghton, 1988; Houghton, 1998; Houghton and Messier, 1991; Houghton 1998; Hronsky and Houghton, 2001; Wines, 2006) and provides validity to the current study.

Table 5.13

Analysis of variance – preparers, auditors and users

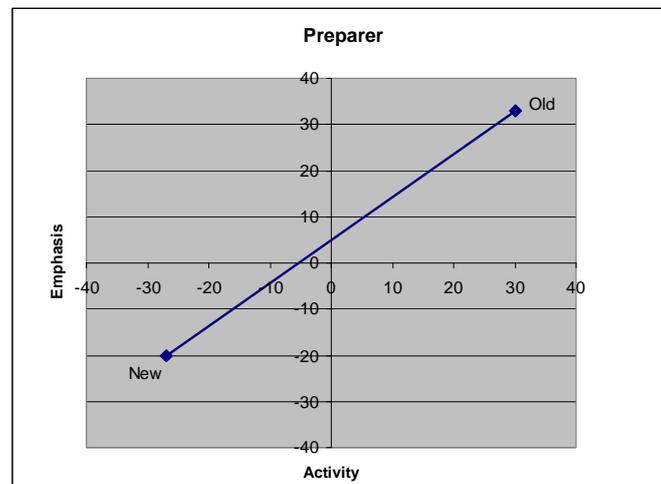
Preparers	<i>F</i>	Sign of <i>F</i>
Factor 1 – Emphasis	4.996	.029**
Factor 2 – Activity	2.519	.118
<hr/>		
Auditors		
Factor 1 – Potency	23.363	.001***
Factor 2 – Activity	.187	.667
<hr/>		
Users		
Factor 1 – Emphasis	36.881	.001***

* = Significant ($P = <0.10$)** = Significant ($P = <0.05$)*** = Significant ($P = <0.01$)**5.4.1 Interpretation of ANOVA****Preparers - ANOVA**

The preparer financial reporting group resulted in a significant difference in placement on the first factor (Emphasis) between the old and new definition of “cash” ($F=4.996$, $P=0.029$). While the old definition had a positive placement on the Emphasis factor of 30, the new definition resulted in a negative placement of -27 . The shift in placement on the second factor (Activity) was less dramatic, moving from a positive placement of 22 to a negative placement of -20 .

Figure 5.1 presents a clear shift on the two dimensional axis indicating that the new definition of “cash” was seen by the preparer subject group to have lower Emphasis and Activity scores. Given the lack of significant difference regarding factor (2) (Activity) ($F=2.519$, $P=0.118$) it is the Emphasis factor that explains most of this difference in meaning.

Figure 5.1
Preparer placements



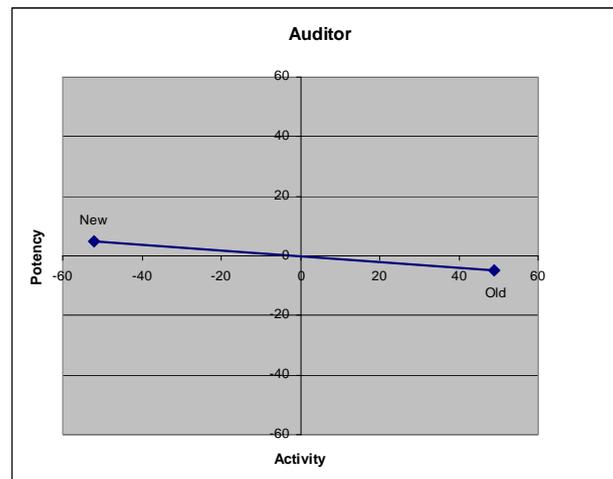
This result is anticipated by the researcher in that the concept of “cash” under the new definition provides additional information relating to the definition. This issue is readdressed later in this chapter under Section 6.6.

Auditors - ANOVA

The auditor financial reporting group resulted in a highly significant difference in placement on the first factor (Potency) between the old and new definition of “cash” ($F= 23.363$, $P=0.001$). While the old definition had a positive placement on the Potency factor of 49, the new definition resulted in a negative placement of -52 . The shift in placement on the second factor (Activity) is notably small, moving from a positive placement of 5 to a negative placement of -5 .

Figure 5.2 presents a clear shift on the two dimensional axis indicating that the new definition of “cash” was seen by the auditor subject group to have a lower EMPHASIS and marginally greater ACTIVITY. Given the lack of significance regarding the Activity factor ($F=.187$, $P=0.667$) it is the first factor that explains most of this movement.

Figure 5.2
Auditor Placements

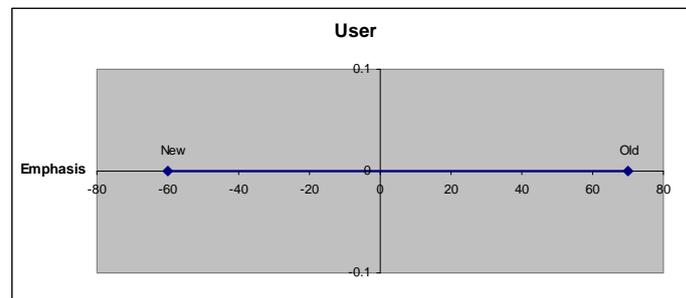


Users - ANOVA

The user financial reporting group resulted in a highly significant difference in placement on the single factor (Emphasis) established between the old and new definition of “cash” ($F=36.881$, $P=0.001$). While the old definition had a positive placement on the factor of 70, the new definition resulted in a large change in placement to -60 . This movement can be seen on a single dimensional axis and represents a significant shift in the measured meaning of the concept under examination. Contributing to this shift in meaning is the generic nature of the concept under examination, the less sophistication of the subject group and the change in wording (although very subtle) to the concept “cash” under the new definition. All of which had been anticipated by the researcher.

Figure 5.3 presents a shift on the single dimensional axis (Emphasis) indicating that the new definition of “cash” was seen by the user subject group to have a greater Emphasis.

Figure 5.3
User Placements



5.4.2 Discussion

The results of the means comparability test and ANOVA provide empirical evidence that a change in subject response has occurred between the old and new definition of the concept “cash”, for all three financial reporting groups. In the case of the first identified factors for all three groups, the change had a high level of significance ($P < 0.05$ for the preparer groups and $P < 0.01$ for the auditor and user groups) and is therefore important in addressing research question (3).

5.5 Decision Outcomes

To address research question (4) a comparison between the decision outcomes from the 10 cases by definition group was undertaken. Given the established differences in cognitive structure between the three financial reporting groups, each group’s results were assessed independently.

Firstly, the results of the ANOVA between Task (2), the binary “yes” or “no” classification, and Task (3), the degree to which the subjects believe the item in each case represent an item of “cash”, was considered. This confirmed that for all three financial reporting groups there was no significant difference between the answers to Task (2) and Task (3) (in terms of the final decision outcome, cash or not cash). Therefore the results from Task (3) are valid and further analysis can be undertaken on that basis.

The results of the means comparability test are found in Tables 5.14, 5.15 and 5.16 below along with the details of the ANOVA. While at a glance it would appear obvious that the new definition has resulted in a change in subject responses (to a number of the cases) it is the extent (or significance) of this change that provides the evidence required to address research question (4).

Table 5.14
Analysis of variance of decision scores for preparers

Case	Items	Means		<i>F</i>	Sign of <i>F</i>
		Old Definition	New Definition		
1	Coins and notes on deposit	10.00	10.00		
2	Accounts receivable	49.63	49.00	.001	.976
3	A four month treasury bill	42.59	50.65	12.725	.001***
4	Reserve bank bill	33.33	28.39	1.299	.259
5	Gold bullion	45.19	43.33	.107	.745
6	Readily tradable equity securities	44.81	44.19	.000	.993
7	A three month futures contract	54.62	53.87	.094	.760
8	Non-cash payment for goods and services (Barter)	52.96	56.33	1.660	.203
9	On-call bank overdraft	14.44	31.94	13.620	.001***
10	Preference shares redeemable in three months for a fixed amount of cash	49.23	40.65	5.527	.022**

* = Significant ($P < 0.10$)
** = Significant ($P = < 0.05$)
*** = Significant ($P = < 0.01$)

The results of the ANOVA identify a high degree of significance for three cases for the preparer group (cases 3, 9 and 10) between the two definition groups. The most significant differences were observed in case 3, “A four month treasury bill”, ($F=12.725$, $P=.002$) and case 9, “On-call bank overdraft”, ($F=13.620$, $P=.001$). While in both cases the overall decision response did not change (cash vs. not cash), the decision outcomes had moved further along the Likert scale to represent a non-cash classification (10 = clearly an item of CASH, while 60 = clearly NOT an item of CASH, see Appendix A, Task 3).

The opposite applied for case 10, “Preference shares redeemable in three months for a fixed amount of cash”, representing a shift on the Likert scale closer to the “clearly an item of CASH” end on the scale, although still remaining on the “clearly NOT an item of CASH” side of the scale. The results of the ANOVA, ($F=13.620$, $P=.022$), indicate that while the change is significant it is not as strong as the results found in cases 3 and 9.

These results help provide two possible conclusions. The first, that a change in the definition of the concept “cash” has resulted in a change in the decision outcomes made by subjects; and the second, with the exception of case 10, that the new definition appears to provide subjects with greater *clarity* surrounding classification decisions where *timing issues* are a factor (the time it takes to convert to cash). As noted in Chapter 4, timing issues are representative of the Activity scales as they are said to have *temporal connotations* (Wines, 2006).

The key element to cases 3 and 10 are the inclusion of a timing component. The fact that the new definition includes a reference to items that are “...*short term, highly liquid investments that are readily convertible to known amounts of cash...*”, (NZ IAS 7), may have improved an individual subject’s decision to include or exclude the case item from the definition of “cash”.

In case 3, the inclusion of the reference to “A four month treasury bill” would appear to be influential in subject responses moving further towards the *not cash* position on the scale, while in case 10 the inclusion of the term “...redeemable in three months for a fixed amount of cash”, has resulted in a shift closer towards the *cash* position on the scale. Therefore it would appear that the more references made to the *time* and the *security* surrounding the amount of cash, the more likely the subject’s decision would change.

Table 5.15

Analysis of variance of decision scores for auditors

Case	Items	Means		<i>F</i>	Sign of <i>F</i>
		Old Definition	New Definition		
1	Coins and notes on deposit	10.00	10.00		
2	Accounts receivable	49.43	52.73	.935	.337
3	A four month treasury bill	48.00	57.88	31.155	.000***
4	Reserve bank bill	27.14	28.18	.099	.754
5	Gold bullion	38.86	47.58	6.678	.012**
6	Readily tradable equity securities	45.71	52.42	12.422	.001***
7	A three month futures contract	50.29	52.12	.299	.587
8	Non-cash payment for goods and services (Barter)	58.00	57.27	.184	.669
9	On-call bank overdraft	13.14	24.55	9.867	.003**
10	Preference shares redeemable in three months for a fixed amount of cash	42.00	23.94	40.866	.000***

* = Significant ($P = <0.10$)
** = Significant ($P = <0.05$)
*** = Significant ($P = <0.01$)

The auditor group resulted in a significant change to the decision outcomes for cases 3 ($F=31.155$, $P=.001$), 5 ($F=6.678$, $P=.012$), 6 ($F=12.422$, $P=.001$), 9 ($F=9.867$, $P=.003$), and 10, ($F=40.866$, $P=.001$). The results for case 3 are similar to that found in the preparer group and are explained on the same basis. Case 10 is also similar with the exception that the overall decision had changed from being a *not cash* under the old definition to being a *cash* item under the new definition. This result is important to this study as it helps indicate not only a change in the degree that individual subjects believed an item to represent “cash” under the old and new definition but the actual understanding of whether the item is or is not an item of “cash”.

With regards to case 5, “Gold bullion” and 6, “Readily tradable equities”, the results follow a similar pattern to case 3. However the rationale behind this change may be better explained when looking at the last section of the definition of “cash” under NZ

IAS 7 which includes the words “...and which are subject to an insignificant risk of change in value”. Both commodities (e.g., gold) and equities (e.g., preference shares) are listed on exchanges that are traded regularly. Therefore their market value could be subject to regular change. Accordingly, the additional wording in the new definition of “cash” may have resulted in the auditor group’s decision outcome moving closer to the high end of the *not cash* position on the scale.

Table 5.16
Analysis of variance of decision scores for users

Case	Items	Means		F	Sign of F
		Old Definition	New Definition		
1	Coins and Notes on Deposit	12.17	10.00	1.178	.283
2	Accounts receivable	49.13	47.04	.337	.564
3	A four month treasury bill	30.87	50.74	27.475	.000***
4	Reserve bank bill	23.91	21.48	.415	.522
5	Gold bullion	41.30	44.07	.593	.445
6	Readily tradable equity securities	36.52	45.19	4.069	.049**
7	A three month futures contract	52.61	48.52	1.786	.188
8	Non-cash payment for goods and services (Barter)	57.39	58.15	.273	.604
9	On-call bank overdraft	16.52	43.33	33.687	.000***
10	Preference shares redeemable in three months for a fixed amount of cash	40.87	26.30	12.398	.001***

* = Significant (P = <0.10)
 ** = Significant (P = <0.05)
 *** = Significant (P = <0.01)

The final group, user, resulted in a significant change to the decision outcomes for cases 3 ($F=27.475$, $P=.001$), 6 ($F=4.069$, $P=.049$), 9 ($F=33.687$, $P=.001$), and 10, ($F=12.398$, $P=.001$). The results for all four cases are similar to the results of the auditor group in that the subjects’ decision outcomes have moved closer to a *not cash* position for cases 3, 6 and 9 and closer to a *cash* position for case 10. The researcher believes these changes to have similar reasoning to that noted for the auditor group in that the new definition appears to provide a greater degree of *clarity* regarding issues

surrounding *timing*. Also the exposure to changes in value for listed items (those listed on trading exchanges) would appear to have provided subjects with greater *clarity* regarding the case items under review. The results are also similar in the fact that for cases 9 and 10, the overall position has changed (from *not cash* to *cash* for case 9 and from *cash* to *not cash* for case 10).

It is important to note that while all three financial reporting groups did demonstrate a change in decision outcome, and in most cases in a similar manner (direction on the Likert scale), differences between the groups' mean scores were observed. This may further support the earlier findings regarding differences in cognitive structure, especially given that the user group is believed to hold a unidimensional cognitive structure compared to the dimensional structure of the preparer and auditor groups.

5.6. Decision Outcomes and Measurement of Meaning

The results of ordinal probit regression are provided in Tables 5.16, 5.17 and 5.18 below. Consistent with the results established in Section 5.2 above, each financial reporting group will be assessed independently as they are not assumed to share the same cognitive structure in which meaning is held.

5.6.1 Preparers

Table 5.17 presents the results from the ordinal probit regression for the preparer financial reporting group. It is observed that five of the threshold parameters were significant (1, 2 and 3, $P=0.001$, and 5, $P=0.001$), validating the use of the ordinal probit technique (Wines, 2006). The general explanatory power of the model is supported by the Pseudo R^2 values (0.523 for the Cox and Snell R^2 and 0.543 for Nagelkerke R^2).

The results also indicate a high degree of significance between the decisions outcomes under the 10 cases and the subjects' factor loadings for the Activity factor, ($P=.001$).

Table 5.17

Ordinal probit regression (preparers)

Preparers						
Parameter		Estimate	Std.			Sig.
			Error	Wald	df	
Threshold	1	-2.813	0.290	94.339	1	0.000
	2	-1.660	0.258	41.438	1	0.000
	3	-1.100	0.248	19.606	1	0.000
	4	-0.340	0.242	1.978	1	0.160
	5	0.818	0.245	11.132	1	0.001
Factor – EMPHASIS	1	-0.022	0.083	0.072	1	0.788
Factor – ACTIVITY	2	-0.273	0.084	10.519	1	0.001***
Case	1	-26.298	0.000	.	1	.
	2	0.857	0.346	6.154	1	0.013
	3	0.062	0.335	0.034	1	0.853
	4	-1.493	0.339	19.359	1	0.000
	5	0.074	0.335	0.049	1	0.824
	6	-0.005	0.335	0.000	1	0.989
	7	1.387	0.361	14.725	1	0.000
	8	1.938	0.390	24.750	1	0.000
	9	-2.681	0.362	54.942	1	0.000
	10	0(a)	.	.	0	.

(a) =

Pseudo R.Square

Cox and Snell 0.523

Nagelkerke 0.543

* = Significant (P = <0.10)

** = Significant (P = <0.05)

*** = Significant (P = <0.01)

Given the strong level of representation on the factor placement for the Activity factor (all three of the highest loaded scales represented by the Activity factor where activity as identified by Osgood et al., 1957) the results indicate that the decision outcomes are correlated with the factor placements (location of the concept along the relevant axis) for the Activity factor, indicating that an apparent relationship exists for one of the two factors for this reporting group.

A lack of significance on the Emphasis scale may limit the explanatory power of this factor, indicating a lack of correlation between the factor placement for that factor and the decision outcomes.

5.6.2 Auditors

Table 5.17 presents the results from the ordinal probit regression for the auditor financial reporting group. Three of the threshold parameters resulted in high levels of significance (1, 4 and 5, $P=0.000$), also validating the use of the ordinal probit technique (Wines, 2006), while the general explanatory power of the model is supported by the Pseudo R^2 values (0.598 for the Cox and Snell R^2 and 0.620 for Nagelkerke R^2). However, the results also indicate a lack of significance between the decisions outcomes under the 10 cases and the subjects' factor loadings for the Potency factor, ($P=0.668$).

Table 5.18

Ordinal probit regression (auditors)

Auditors						
Parameter		Estimate	Std.	Wald	df	Sig.
			Error			
Threshold	1	-2.067	0.262	62.055	1	0.000
	2	-0.461	0.222	4.306	1	0.038
	3	0.225	0.220	1.039	1	0.308
	4	0.980	0.226	18.748	1	0.000
	5	1.937	0.238	66.116	1	0.000
Factor – POTENCY	1	-0.034	0.078	0.184	1	0.668
Factor – ACTIVITY	2	-0.025	0.078	0.100	1	0.752
Case	1	-25.537	0.000	.	1	.
	2	2.289	0.330	48.196	1	0.000
	3	1.732	0.316	29.984	1	0.000
	4	-0.604	0.306	3.897	1	0.048
	5	1.039	0.307	11.457	1	0.001
	6	1.740	0.316	30.245	1	0.000
	7	2.315	0.331	49.050	1	0.000
	8	3.715	0.417	79.388	1	0.000
	9	-2.643	0.352	56.349	1	0.000
	10	0(a)	.	.	0	.
(a) =						
<u>Pseudo R.Square</u>						
Cox and Snell	0.598					
Nagelkerke	0.620					
* = Significant (P = <0.10)						
** = Significant (P = <0.05)						
*** = Significant (P = <0.01)						

Given the strength of the first factor for the auditor group, the results would indicate that there is little correlation between the variability in measured (connotative) meaning and the variability in the decision outcomes.

The second factor, Activity, also indicated a lack of significance suggesting that the factor placement for the auditor group provides little explanatory power for any resulting decision outcomes.

One possible explanation for this result could relate to the way in which the research instrument was administered. As noted in Chapter 6, a limitation of the current study is the fact that a separate semantic differential was not undertaken by each subject before each case was considered. This could lead to limited variability in the independent variable which limited the possibility for correlating results between the factor placements and the decision outcomes. This may provide an opportunity for future research.

5.6.3 Users

Table 5.18 presents the results from the ordinal probit regression for the user financial reporting group. For this group, three of the threshold parameters resulted in high levels of significance (1, 4 and 5, $P=0.000$), while the general explanatory power of the model is supported by the Pseudo R^2 values (0.507 for the Cox and Snell R^2 and 0.524 for Nagelkerke R^2).

Table 5.19
Ordinal probit regression (users)

Users						
Parameter		Estimate	Std.	Wald	df	Sig.
			Error			
Threshold	1	-1.531	0.283	29.287	1	0.000
	2	-0.306	0.263	1.360	1	0.244
	3	0.118	0.262	0.205	1	0.651
	4	1.066	0.268	15.820	1	0.000
	5	2.201	0.285	59.846	1	0.000
Factor – EMPHASIS	1	-0.119	0.079	2.282	1	0.131
Case	1	-5.498	1.038	28.078	1	0.000
	2	1.693	0.366	21.430	1	0.000
	3	1.005	0.357	7.934	1	0.005
	4	-1.097	0.361	9.211	1	0.002
	5	1.011	0.357	8.022	1	0.005
	6	0.920	0.356	6.668	1	0.010
	7	1.954	0.371	27.774	1	0.000
	8	3.671	0.462	63.243	1	0.000
	9	-0.379	0.354	1.148	1	0.284
	10	0(a)	.	.	0	.

(a) =

<u>Pseudo R.Square</u>	
Cox and Snell	0.507
Nagelkerke	0.524

* = Significant (P = <0.10)

** = Significant (P = <0.05)

*** = Significant (P = <0.01)

Although approaching significance the results indicate a lack of significance between the decisions outcomes under the 10 cases and the subjects' factor scores for the single factor, Emphasis, ($P=0.131$).

Similar to the auditor group results, the lack of variability in the independent variable may partially explain this result. However, a further discussion will be provided in Chapter 6, "Discussion".

5.7. Definition Quality

The results of the ANOVA for each financial reporting group's perception of the quality of the allocated definition are presented in Tables 5.19, 5.20 and 5.21. In general, the result provides a clear indication that both the auditor and user financial reporting group's perceive the overall *quality* of the definition of cash to have improved under NZ IAS 7. Although the results of the ANOVA for the preparer group suggest a lack of significance for all four items noted in Task (5), a review of the mean scores did indicate a general shift in the subject's perception of the quality of the definition of "cash".

5.7.1 Preparers

Table 5.19 shows a reduction in the mean scores for items (1), (3) and (4), indicating an overall improvement in the *quality* of the definition of the concept "cash". This is also supported by a positive increase in item (2), which also indicates an improved position. While the changes are not significant, the mean scores provide weak evidence that the preparer group perceives the change to NZ IAS 7 to result in an improvement in consistency and preciseness, a reduction in ambiguity and an overall improvement in comparability between and within company financial statements.

Table 5.20

Analysis of variance of preparers' perception of definitional quality

Preparers		Means		ANOVA	
Items		Old Definition	New Definition	<i>F</i>	Sign of <i>F</i>
1	The use of the definition of cash referred to in this survey will lead to consistent application in practice.	24.62	21.94	1.133	0.292
2	The definition of cash referred to in this study seems imprecise.	32.31	34.52	0.699	0.407
3	Preparers of financial statements face little ambiguity when applying the definition of cash referred to in this survey.	26.92	23.55	1.414	0.239
4	The definition of cash referred to in this study ensures comparability between and within company financial statements.	25.38	24.52	0.104	0.748
*	= Significant ($P = <0.10$)				
**	= Significant ($P = <0.05$)				
***	= Significant ($P = <0.01$)				

5.7.2 Auditors

Table 5.20 presents the results of the ANOVA for the auditor group, indicating a high level of significance for all four items tested ($P < 0.001$). The five scales applicable to Task (4) range from 10, “strongly agree”, to 50, “strongly disagree”, with the neutral position of 30 representing “undecided”.

A reduction in mean scores for items (1), (3) and (4) and the increase in the mean score for item (2), indicates a significant improvement in the perceived *quality* of the new definition of “cash”. It would appear from the results that the auditor group believed the change to the definition of “cash” provided in NZ IAS 7 results in an improvement in consistency, increase in precision, a reduction in ambiguity and an overall improvement in comparability between and within company financial statements.

Table 5.21

Analysis of variance of auditors' perception of definitional quality.

Auditors		Means		ANOVA	
Items		Old	New	<i>F</i>	Sign of <i>F</i>
		Definition	Definition		
1	The use of the definition of cash referred to in this survey will lead to consistent application in practice.	29.43	20.61	24.398	0.000***
2	The definition of cash referred to in this study seems imprecise.	25.71	34.24	15.491	0.000***
3	Preparers of financial statements face little ambiguity when applying the definition of cash referred to in this survey.	34.00	22.42	28.634	0.000***
4	The definition of cash referred to in this study ensures comparability between and within company financial statements.	32.00	20.61	35.086	0.000***
*	= Significant (P = <0.10)				
**	= Significant (P= <0.05)				
***	= Significant (P= <0.01)				

Also of interest is the extent to which the mean score moved away from the *undecided* scale, moving closer to either *strongly agree* or *strongly disagree* (depending on the item being addressed). The most obvious example of this can be seen with items (1) and (4) where the mean score under the old definition were almost *undecided*, (i.e., 29.43 for item 1 and 32.00 for item 4) and the positions under the new definition almost equal to (20), *agree*. This would indicate that the new definition has, to some extent, changed the auditor group's minds regarding the new definition's ability to lead to a "...consistent application in practice" and "...ensure[s] comparability between and within financial statements.

5.7.3 Users

The results presented in Table 5.21 are very similar in nature to those of the auditor group in that the ANOVA indicated a high level of significance for all four items tested ($P < 0.001$).

A reduction in mean scores for items (1), (3) and (4) and the increase in the mean score for item (2), indicates a significant improvement in the perceived *quality* of the new definition of “cash”. It would appear from the results that the user group believed the change to the definition of “cash” provided in NZ IAS 7 to result in an improvement in consistency, increase in precision, a reduction in ambiguity and an overall improvement in comparability between and within company financial statements.

Table 5.22

Analysis of variance for user’s perception of definitional quality

Users		Means		ANOVA	
Items		Old Definition	New Definition	<i>F</i>	Sign of <i>F</i>
1	The use of the definition of cash referred to in this survey will lead to consistent application in practice.	31.74	18.89	23.455	0.000***
2	The definition of cash referred to in this study seems imprecise.	27.39	40.37	24.259	0.000***
3	Preparers of financial statements face little ambiguity when applying the definition of cash referred to in this survey.	33.48	16.67	35.684	0.000***
4	The definition of cash referred to in this study ensures comparability between and within company financial statements.	33.59	18.89	33.495	0.000***
*	= Significant ($P = < 0.10$)				
**	= Significant ($P = < 0.05$)				
***	= Significant ($P = < 0.01$)				

Similar to the auditor group the mean score for the user group has moved away from the *undecided* scale moving closer to either *strongly agree* or *strongly disagree* (depending on the item being addressed). The most obvious example of this can be seen with items (1) and (4) where the mean score under the old definition was almost *undecided*, (i.e., 29.43 for item 1 and 32.00 for item 4) and the positions under the new definition are almost equal to *agree*. Once again, this is almost identical to the results for the auditor group, indicating that the user group believe that, to some extent, the new definition has an ability to lead to a consistent application in practice and to ensure comparability between and within financial statements.

5.8 Summary

This chapter presented and discussed the results of the analysis undertaken in this study. Section 5.2 discussed the cognitive structure of the three financial reporting groups. The results of the split-half factor comparability test on the total group only stabilised on a simple single factor solution.

However, further analysis was required to identify the extent to which the three groups shared the same cognitive structure. This required a split-half comparability test to be performed on each of the three financial reporting groups. After specifying the number of factors to be established (starting with four and reducing by one until significance was achieved for all identified factors), two stable factors emerged for the preparer and auditor groups and a single stable factor emerged for the user group.

As the user group had a simple unidimensional cognitive structure (represented by a single stable factor structure) they could not be directly compared with the other financial reporting groups for the purpose of further examination in this study.

While the *number* of factors, making up their respective cognitive structures, appeared to be the same for the preparer and auditor group a further factor comparability test identified that the *nature* of the two factors were different between the two groups. Factor comparability indicated that the sets of factors did not appear to be correlated

across the two reporting groups. The conclusion was therefore that the preparer and auditor group did not share the same cognitive structure. Therefore further analysis of the data in this study was restricted to an intragroup analysis (between the definition groups) as intergroup (between financial reporting groups) was not possible.

The next section required the separate factors identified for each financial reporting group to be labelled. This is an important process as it is the factors which provide the axes for the semantic space in which meaning is believed to be held for each group. By reviewing the factor loadings for each of the scale items represented on the semantic differential, the researcher was able to draw comparisons with the work of Osgood et al. (1957), Houghton (1988) and Wines (2006) enabling the factors for each financial reporting group to be labelled.

The preparer group resulted in a two stable factor structure, labelled Emphasis and Activity. The auditor group also resulted in a two stable factor structure; however, these followed the more traditional EPA structure established by Osgood et al. (1957), and were labelled Potency and Activity. Similar to the first factors for the preparer group, the single factor identified for the user group was labelled Emphasis.

Factor placement was established using the mean scores for each factor, for each financial reporting group (separately). By plotting the mean factor scores for each financial reporting group onto the factors (dimensions) established earlier, the movement in measured meaning could be observed between the two definition groups for each financial reporting group within each reporting group's semantic space.

The new definition resulted in a movement along the Emphasis and Activity axes compared to the old definition. The auditor group also showed a similar movement along the Potency and Activity axes. The user group shifted along the Emphasis axis, which also confirmed a decrease in this underlying factor dimension. The results presented in Section 5.1 confirmed that the new definition did result in a change in the

measured (connotative) meaning of the concept “cash” for all three financial reporting groups.

The following section looked at the results of the decision outcome analysis, revealing that for all three financial reporting groups, the new definition under NZ IAS 7 resulted in a movement in mean scores for each of the 10 cases analysed. The results of the ANOVA indicated significant differences for all three financial reporting groups on a number of the 10 cases, helping to support the proposition that the new definition resulted in changes in decision outcome.

Weaker support was found for the expected relationship between measured connotative meaning and decision outcome. The results of the ordinal probit regression resulted in significance for the second factor for the preparer group but no significant influence for any other factors for decisions by the auditor and user groups.

The final section of this chapter looked at the overall *quality* (as defined in this study) of the new definition of “cash”, using several Likert scale items to identify each subject’s perceptions of the extent to which the new definition will lead to a consistent application in practice, is more precise, has little ambiguity and will ensure comparability between and within company financial statements.

The results of ANOVA indicated that for the auditor and user financial reporting groups, significant differences were identified for all four items tested, indicating an improvement in the quality of the definition of “cash” under NZ IAS 7. While the change in mean scores for the preparer group suggested a positive improvement on all four items, the results were not significant.

The following chapter discusses these results further, addressing the research questions established in Chapter 3.

Chapter 6

Discussion and Limitations

6.1 Introduction

The following chapter reviews the findings established in Chapter 5 and discusses the results in light of the research questions and hypotheses established in Chapter 3. Next, the limitations of the study are considered.

First, a review of research question (1) is considered, addressing the issue of shared cognitive structure between the three financial reporting groups. This is followed by a consideration of research question (2), looking at the measurement of meaning between the three financial reporting groups. Research question (3) is then addressed, concentrating on the possible differences between the meaning attributed to the definition of “cash” as represented by FRS 7 and NZ IAS 7 within each reporting group. Next, differences in decision outcomes from the 10 cases attributable to the alternative definitions are reviewed in light of research question (4). A discussion of research question (5) follows which focuses on the relationship between decision outcomes and measured meaning. The last research question to be considered, research question (6), explores the perceptions of the quality of each definition of “cash” held by each of the three parties to the financial reporting process: preparers, auditors and users.

The final section considers the limitations of the current study, which are specific to four main areas: subject selection, the semantic differential technique, the experimental design and the decision outcome case selection.

6.2 Cognitive Structure

In order for the various parties to the accounting communication process to interpret accounting information in a similar way, they must hold the meaning of the terms and concepts within a shared cognitive structure (Houghton, 1987a). This issue is addressed in the current study by testing the alternate hypotheses 1.1, 1.2 and 1.3.

Prior research would suggest that variations in cognitive structure will exist where the subjects exhibit differing levels of sophistication regarding the area of interest under investigation (e.g., Flamholtz and Cook, 1978; Houghton, 1987a; Houghton and Messier, 1991; Houghton and Hronsky, 1993). Therefore it is anticipated that the results of the current study will support this proposition, with the preparer and auditor groups demonstrating a shared cognitive structure. Given the differences in professional training the researcher does not anticipate the presence of shared cognitive structure between the preparer and auditor groups, and the user group.

The results of the factor comparability test between the three financial reporting groups identified a two factor structure for the preparer and auditor groups and a single factor structure for the user group. This leads to the acceptance of hypotheses 1.2 and 1.3. That is, a significant difference appears to exist in cognitive structure between the auditor and user, and preparer and user financial reporting groups for the concept of “cash”, as it relates to the cash flow statement.

A further factor comparability test between the preparer and auditor reporting groups indicated that while they shared the same *number* of factors (two), the factor loadings on each scale item were not comparable, also leading to the acceptance of Hypothesis 1.1.

The acceptance of hypotheses 1.1, 1.2 and 1.3 indicates that none of the three financial reporting groups share the same cognitive structure, which is consistent with the notion that the level of sophistication matters when assessing a group's latent understanding of accounting concepts (such as "cash"). The results suggest that the user reporting group hold their meaning for the concept "cash" in a relatively simple, undimensional, factor structure while the preparer and auditor groups hold their meaning in a somewhat more complex, two dimensional, factor structure (albeit, not the same two factors). This is the first study to confirm a lack of shared cognitive structure for all three financial reporting groups in the study of the concept "cash". The importance of these findings is that meaning between the three parties is not believed to be held within the same cognitive structure, thus implying the interpretation of meaning is also not shared.

Littleton and Zimmerman (1962) suggested that communication is a key objective of accounting. The current study provides empirical evidence to suggest that the effectiveness of communication between the three financial reporting groups is heavily restricted through a lack of shared cognitive structure. This could impact on the reliability of the information as a lack of shared meaning may lead to miscommunication between the sender (preparer) and the receiver (user).

In order to improve the level of communication between the three financial reporting groups there must be evidence of a shared cognitive structure. A subject's cognitive structure in the current study is dependent on a number of factors, including their education, business experience and understanding of the field of study. Therefore a shared cognitive structure between the three main groups to the financial reporting process would mean a greater attention to the level of knowledge each has regarding the area under examination.

Osgood et al. (1957) suggested that the interpretation of specific words can be influenced by people's previous experiences and therefore two people may assign entirely different connotative meanings to the same word. While aligning individual experiences is not always possible in a general sense, for the purpose of specific fields

of interest (as in the case of accounting) the use of group workshops and training programs can help bring individual experience closer together.

In an accounting setting, this may include the use of training workshops held by standard-setters to ensure that all parties to the communication process are equally exposed to the issues surrounding accounting and accounting information. Currently training around new and amended standards is made available to NZICA members, which would include preparers and auditors. However the users of that information may not be present due to their lack of membership status. The results of this study would indicate differences in cognitive structure exist across preparers, auditors and users, strengthening the need for a greater level of cohesion across the different parties to the communication process.

Accounting information is communicated so that the various user groups can use that information within their decision making process. Ensuring that users of that information are exposed to the technical issues surrounding the preparation of the financial statements may help improve the level of shared cognitive structure and therefore improve the level of communication between these key parties to the communication process.

6.3 Measurement of Connotative Meaning

6.3.1 *Between subject groups*

The acceptance of hypotheses 1.1, 1.2 and 1.3 means that further analysis of between group differences is not justified. Unless pairs of subject groups hold the meaning of a term or concept within the same (or substantially similar) cognitive structure, an evaluation of their differences in measured meaning cannot be undertaken. Accordingly, hypotheses 2.1 to 2.6, which consider the existence of differences in the interpreted meaning of the concept “cash”, as defined in FRS 10 and NZ IAS 7, between preparers, auditors and users, could not be tested in the current study. Therefore the analysis stage of this study proceeds directly to hypotheses 3.1, 3.2 and

3.3, testing for significant differences *across* definitions, *within* each subject group (i.e., between definition groups).

6.3.2 Across definitions and within subject groups

Everett and Entekin's (1980) factor comparability test confirmed the suitability of each reporting group for intragroup examination in that the subjects within each reporting group appear to hold a similar cognitive structure in which the meaning of the concept "cash" is held. This result enabled comparison to be made of the mean factor loadings from each of the two definition groups, within each of the three subject groups. Consequently, relevant information regarding changes in the connotative meaning of the concept "cash", resulting from the move to NZ IAS 7, could be analysed.

Looking at each subject group separately, it would appear that the preparer group found the new definition to have less Emphasis and Activity than the old definition. For the auditor group the results indicated a reduction in Potency and a minor increase in Activity under the new definition, while the user group presented a decrease in the factor labelled Emphasis. The changes in mean factor loadings for all definition groups provided empirical evidence that a change in meaning occurred as a result of the new definition of "cash". An ANOVA provided statistical evidence of the significance of the change in meaning on the first factor identified for both the preparer (Emphasis) and auditor (Potency) groups, and on the single factor identified for the user group (Emphasis).

The results support the proposition that a change has occurred in the connotative meaning of the concept "cash" as a result of the introduction of the new definition under NZ IAS 7 by each of the subject groups. This provides empirical evidence to accept hypotheses 3.1 to 3.6, that the new definition of "cash" provided under NZ IAS 7 presents a different connotative meaning for all three financial reporting groups.

These findings are important as they help support the conclusion that a change in wording (although subtle) had created a change in connotative meaning for preparers, auditors and users. This could have significant ramifications for users and standard-setters as the literature accepts that it is connotative meaning which drives individual behaviour (see Hronsky and Houghton, 2001; Wines, 2006). Also, as effective communication in accounting involves consistency in the message between the sender and the receiver any change in meaning could reduce the effectiveness of the communication process, leading to misunderstandings, confusion and may also increase the potential for creative or aggressive reporting practices (Bedford and Baladouni, 1962).

6.4 Decision Outcomes

6.4.1 *Variability in decision outcomes*

Hronsky and Houghton (2001) were the first to assess the decision behaviour of subjects in a measurement of meaning study in accounting. Their aim was to determine whether a change in connotative meaning lead to a change in the decisions made by the subject groups.

In the current study 10 decision cases provided a mechanism from which the researcher could empirically test possible differences in decision outcomes as a result of changes to the definition of “cash”. An ANOVA for each of the 10 cases, across each definition group, indicated a significant difference in three of the 10 cases for the preparer group (cases 3, 9 and 10), five for the auditor group (cases 3, 5, 6, 9 and 10) and four for the user group (cases 3, 6, 9 and 10). With the exception of case 9 (on-call bank overdraft) the cases which indicated the highest significance related to those which required a judgement decision to be made regarding issues of *timing* and/or *variability* in changes in financial value, for the underlying case items (e.g., case 3, a four month treasury bill; case 5, gold bullion; case 6, readily tradable equity securities; case 10, preference shares redeemable in three months for a fixed amount of cash).

The other significant change common to all three financial reporting groups was case 9 (on-call bank overdraft). This change is believed to have resulted from the removal of this phrase from the definition of “cash” under NZ IAS 7, leading to an increase in the degree to which the subjects believe the item did not represent an item of “cash” in the cash flow statement. While FRS 10 included the words “on-call bank overdraft” within the definition of “cash”, NZ IAS 7 did not include these words, leading to a change in the subjects’ decision outcomes regarding this case item.

Of those cases that represented a significant change between the old and new definition of “cash”, several also resulted in an overall change in decision outcome between the items representing “cash” or “not cash” within the cash flow statement. These included case 4 (reserve bank bills) for the preparer group; case 9 (on-call bank overdraft) for the preparer and user groups and case 10 (preference shares redeemable in three months time for a fixed amount of cash) for the auditor and user groups.

The results of the decision outcome analysis therefore support the proposition that the new definition provides the subjects with information that changes their decision outcomes. The direction of those changes were dependent on the level of *certainty* (both in timing and value) that the case item will become cash of a known amount within a short period of time, with items that are less likely to be converted to known amounts of cash in a short period of time being reclassified under the new definition nearer to the “not cash” position on the 6 point Likert scale.

This could indicate that the new definition is more informative when dealing with more complex cash items, supporting the proposition that the new definition could reduce ambiguity surrounding more complex and possible controversial items. As ambiguity is inconsistent with the concept of reliability, the results may indicate an increase in the level of reliability caused by the inclusion of the key words, “...readily convertible to known amounts of cash which are subject to an insignificant risk of changes in value” (NZ IAS 7, Para 6).

The change in decision outcome for case 9 (on-call bank overdraft) is somewhat different in that it implies less clarity regarding this case item, with subjects from all three financial reporting groups scoring this item closer to the position of “not cash” under NZ IAS 7 than under FRS 10, with two of the three subject groups (preparers and users) changing their overall decision outcome from *clearly an item of cash* to *clearly not an item of cash*. On reviewing the discussion information in NZ IAS7 it is clear that this item is intended to remain an item of “cash” which indicates that the removal of the key words “on-call bank overdrafts” from the definition of “cash” in NZ IAS 7 has resulted in this item being reclassified as “not cash” irrespective of the accompanying discussion in the standard.

The possible effect of this change could see the overstatement of cash in the cashflow statement by those entities that have *on-call bank overdraft* facilities, or be misunderstood by those users of those financial statements. It may also encourage aggressive reporting practices by entities looking to show larger cash positions than actually exist. Given that the commentary to NZ IAS 7 does not suggest the removal of this item from the definition of “cash” the results could prove useful to standard-setters when looking at the possible implications of the removal of the wording in question from the definition of “cash”.

These results confirm the acceptance of hypotheses 4.1, 4.2 and 4.3 that a significant difference exists in the decision outcomes by preparers, auditors and users resulting from the definition of “cash” presented in FRS 10 and NZ IAS 7. This provides empirical evidence that the inclusion or omission of key wording within a definition in accounting can change the overall decision outcome of various parties to the accounting communication process, supporting the recommendation by Mason and Gibbins (1991) that new standards be reviewed to ensure that any ambiguities and other difficulties that detract from the thrust of the standard are clarified.

This is supported by the current study which provides clear evidence for standard setters that changes in the wording of key terms and concepts within accounting

standards can have unintentional effects on the decisions made by various parties to the communication process.

Hronsky and Houghton (2001) and Mason and Gibbins (1991) suggested that clearly worded standards provide guidance to users, therefore supporting the current position that key definitions need to be carefully considered when drafting or changing accounting standards as the impact on accounting communication can be significant.

6.4.2 Measurement of meaning and decision outcome variability

The acceptance of hypotheses 3.1 to 3.3 and 4.1 to 4.3 confirms that a significant difference exists for each financial reporting group in the measured meaning and the decision outcomes under the two definitions of “cash”. We now need to address research question (5), which asks whether the decision outcomes in each of the 10 cases relate to the measured meaning of the concept of “cash” held by each of the three financial reporting groups.

Hronsky and Houghton (2001) and Wines (2006) provided empirical evidence to support the position that changes in the measured connotative meaning of a term or concept is related to the changes in decision behaviours of various subject groups. This relationship established the importance of definitional interpretation in the process of communicating accounting information.

The current study supports the prior literature, represented by a high degree of significance for factor (2), Activity, for the preparer group. The result of the ordinal probit analysis suggests that the variability in decision outcomes for this group is influenced by changes in the Activity factor within the measurement of connotative meaning, represented by the scales, constant, static and inflexible. Therefore hypothesis 5.1 is accepted.

With regards to hypotheses 5.2 and 5.3, there would appear to be no significant relationship between the decision outcomes for the auditor and user groups and the measured (connotative) meaning of the concept “cash”, therefore leading to the rejection of hypotheses 5.2 and 5.3.

In addressing research question (5) it would appear that the change in the measured (connotative) meaning resulting from the move to NZ IAS 7 resulted in a change in decision variability for the preparer group only. However, given the importance of this group to the communication process this result could have far reaching ramifications in that the resulting calculation and presentation of “cash” items under NZ IAS 7 may lead to a change in the information presented to the auditors and other user groups. This once again confirms the need for standard setters to consider the impact of changes in wording as such changes could influence the communication process in accounting by creating an imbalance between what is intended by the sender and what is received by the receiver.

6.5 Definition Quality

Addressing the overall *quality* of the definition of “cash” under FRS 10 and NZ IAS 7 is a first in the study of the measurement of connotative meaning in accounting. This section of the current study focuses on research question (6):

“Has the new definition of cash, established under NZ IAS 7, improved the *quality* of the cash flow statement, as perceived by the three financial reporting groups?”

The results of the ANOVA confirm that from the auditor and user group perspective the new definition of “cash” provided under NZ IAS 7 will lead to more consistency in application, is more precise, is less ambiguous and ensures a greater level of comparability between and within company financial reports. This result would indicate that the new definition has increased the *quality* of the definition of “cash”, as defined for the purpose of this study. These results would appear to be consistent with both the measurement of meaning results discussed in Section 6.3 and the

decision outcomes results discussed in Section 6.4, in that the new definition is seen as being more: direct, expected, planned, controllable, safe, objective, complete, measurable, real, exact, tangible, strong, inflexible, and results in clearer decisions relating to issues regarding *timing* and certainty of financial *value*.⁵⁰

Key issues such as *objectivity* and *measurability* are fundamental characteristics recognised in the New Zealand Framework as creating better quality financial statements. Given the relatively high factor loadings on these scale items by both the auditor and user groups (all above 0.798) it is not surprising that the results from Task (4) are represented as such.⁵¹

The results from this section provide critical information to all parties to the financial reporting process, in that the new definition is believed by both auditors and users to be of a higher quality (as defined for the purpose of this study), leading to a greater level of consistency and comparability between and within company financial statements.

While a statistically significant difference in mean scores was not noted for the preparer group on any of the four items noted in Task (4), there was weak evidence that a change in *quality* occurred as a result of NZ IAS 7. The mean score for all four items noted in Task (4) moved in a positive direction, similar to that of the auditor and user groups. When looking at the underlying factor scores for the scale items for the preparer group, those representing the highest loadings include: tangibility, exact, real, measurable, consistency and objectivity for factor (1) (Emphasis) and inflexibility for factor (2) (Activity). Also, the mean scores for the decision outcomes for cases 3, 9 and 10 also suggested an increase in *clarity* surrounding issues relating to *timing* and variability in changes in *value*. This also supports the position that the new definition has increased the level of *clarity* regarding these issues.

⁵⁰ These items represent those scales which loaded highest for *both* the auditor and user groups (see Table 5.11)

⁵¹ This score is well over the 0.50 threshold used to establish appropriate scale items.

In addressing research question (6), this study presents empirical evidence that the new definition of “cash” presented under NZ IAS 7 does improve the *quality* of the definition of “cash” as perceived by the auditor and user groups. While the preparer group did not represent a significant change in perceived quality, the direction of change in mean scores was similar to that of the auditor and user groups, leading to the final conclusion that the new wording in NZ IAS 7 is perceived to improve the overall quality of the definition of “cash”.

6.6 Final Discussion

This study has examined the connotative meaning attributed to the concept “cash” as interpreted by the three main parties to the financial reporting process. It has also established empirically the extent to which the change in the definition of the concept “cash” has influenced the decision outcomes of the three financial reporting groups, as well as establishing a link between the measurement of connotative meaning and decision outcomes. Also the overall *quality* of the definition provided under both the old and new accounting standards has been considered from the perspective of the three financial reporting groups, adding to the existing literature in this area of study (measured meaning).

The results would indicate that there is strong evidence that the three financial reporting groups do not hold the meaning of the concept “cash” within the same cognitive structure, which in turn supports the proposition that the receivers of the information are not interpreting what is sent by the sender in the same way intended by the sender. Given that accounting communication is reliant on shared meaning taking place it is possible that such miscommunication could lead to misunderstandings among the many parties to the reporting process or even provide an opportunity for purposeful manipulation of that information, as in the case of creative or aggressive reporting practices (Bedford and Baladouni, 1962; Jones et al., 1995; Hronsky and Houghton, 2001).

When looking at the impact that the change in the definition has on each financial reporting group’s decision outcomes, it is accepted that the new definition has

changed the decision behaviour of all three subject groups. Whether this change was intended by the standard-setters or not has not been addressed specifically in the current study, however, given that the change was only statistically significant for two of the three financial reporting groups (the auditor and user groups) the possibility for miscommunication may be increased as the preparer group is seen as the sender while the auditor and user groups are seen as receivers.

The researcher believes that the new definition, while perceived to be less ambiguous and more precise may lead to an even greater variability between the sender and receiver as the preparers do not appear to have significantly changed their position regarding the new definition whereas the auditor and users have. Therefore this study may support the overall proposition that the cash flow statement may not be as objective and free from interpretational differences as has been suggested in the literature (e.g., Lee, 1981, 1984, 1992 and Lee et al., 1999; Jones and Ratnatuga, 1997; Jones et al., 1998; Sharma and Iselin, 2003). Given the recent concerns raised within the profession (e.g., Solomon, 2002; Tergesen, 2002; Broome, 2004) regarding the susceptibility to creative and aggressive accounting practices the cash flow statement may be following a similar track as its predecessor, the fund statement, in that a lack of *definitional clarity* may lead to a variety of interpretations in practice and therefore lead to miscommunication regarding the definition of the key concept “cash”.

Of concern to the researcher is the fact that a concept as simple as “cash” can have a different connotative meaning to different parties to the reporting process which raises issues regarding the level of shared meaning for more complex phrases and statements within accounting.

A further aim of this research was to confirm the validity of the use of Osgood et al.’s (1957) semantic differential technique when looking at concepts relating to the cash flow statement. The results provide support for the use of this method, however, further work may be required on the semantic scales used to confirm their validity and appropriateness in this area of accounting research. This is based on the current

study's variation to Osgood et al.'s traditional three (EPA) factor structure, indicating that the measurement of accounting meaning for the concept "cash" for the three financial reporting groups identified does not conform perfectly to the EPA structure.

Osgood et al. (1957) anticipated this result, confirming that the three (EPA) factor structure was evidential for the measurement of connotative meaning for general (every day) terms and concepts. Therefore more sophisticated areas of examination (as in the current study) may result in fewer conforming factors, thus giving rise to future studies in this area of research. Although Haried (1972) had further defined the semantic scales for specific use in accounting, he also believed that researchers needed to consider variations to these scales to accommodate the different concepts and subject groups under consideration.

Previous literature had looked at the variability of decision outcomes relating to the results of the measured meaning (see Hronsky and Houghton, 2001 and Wines, 2006). The current study extended this further by reviewing the perceived *quality* of the definition(s), therefore adding to this body of work by providing a suitable method from which future research can assess and consider the overall impact a change in the definition of accounting terms and concepts may have on the perceived *quality* of a definition.

6.7 Limitations

The results of the current study must be reviewed in light of inherent limitations. Given the nature of experimental research, it is important to note that many of these limitations create opportunities for future research and therefore should not be viewed necessarily as weaknesses but opportunities to advance the literature in the area of measurement of meaning in accounting.

The limitations are specific to five main areas: subject selection, the semantic differential technique, the experimental design, decision outcomes and case selection.

6.7.1 Subject selection

Two possible limitations relating to the subject selection process have been identified in the current study. The first is whether the auditor group is representative of the wider community of auditors while the second addresses the problems associated with a self selection process.

The first limitation is based on the fact that only auditors working in the *Big 4* CA firms were selected for participation in the current study. However, this limitation may be less important than in prior studies (see Hronsky and Houghton, 2001) as it is the measure of meaning *between* key group members to the reporting process (preparers, auditors and users) that was an important consideration. Given that all three groups work for, or with, larger (most likely listed) companies this representation of the auditor subject group is more directly comparable with the other two reporting groups than a more general sample of auditors. Studies have confirmed that large company audits (mainly listed companies) are dominated by the *Big 4* audit firms (Anonymous, 2006). Therefore the use of this group of subjects appears to be well justified in the current instance.

Given that a similar limitation could be raised regarding the user group, the above explanation would also support the use of registered CFA members as representatives for investors as they are also heavily involved with the evaluation of large, often listed, companies.

A second limitation relating to the subject selection process centres on the self selection process. Strictly speaking, the process of voluntary participation (self selection) is not random and therefore may introduce bias. However, while this bias is common in behavioural accounting research it is not normally significant (Houghton, 1987a, p. 150) and given that self selection bias is of less concern than the possible bias created through a “researcher” selection process, the results of this study may not be compromised.

6.7.2 *Semantic differential technique*

Connotative vs. denotative meaning

There are as many different theoretical viewpoints to the process of defining and measuring communication as there are disciplines (Hronsky and Houghton, 2001) and Osgood et al.'s (1957) semantic differential technique is just one means for achieving this goal. However, given the number of studies that have verified this method for use in accounting research, it is believed to be appropriate in the current study as it focuses on the interpretation, or process of constructing, connotative meaning, which is seen as a key element to the communication process in accounting.

One limitation raised in the measurement of meaning literature is the extent to which connotative meaning defines the boundaries of total meaning in accounting. Clearly denotative meaning represents an important aspect of meaning too. This study, like others in the measurement of meaning literature, assumes that "...literal or denotative meanings are shared, and that the important variations in constructed meaning takes place in the connotative." (Hronsky and Houghton, 2001, p. 136). Hronsky and Houghton argued that confirmation of a shared cognitive structure also implies a shared denotative meaning. On this basis each financial reporting group is believed to have the same denotative meaning (for that group only) for the concept "cash". However, the resulting lack of shared cognitive structure between the three financial reporting groups in the current study could provide an opportunity for future researchers to consider the extent to which denotative meaning supports or contradicts the results of this study.

Scale development

The use of a 22 item semantic scale has been validated in prior studies as appropriate for the measurement of connotative meaning in accounting. However, Osgood et al. (1957) suggested that a different researcher may derive different sets of bipolar adjective scales depending on: their field of study, the subjects used and the term or concept under examination. As the results of this study did not perfectly conform to Osgood et al.'s three (EPA) factor structure, future research could attempt to further

refine the 22 item semantic scale, established by Houghton (1987a), to be more sensitive to the measurement of the concepts within the cash flow statement.

A further limitation identified by Osgood et al. (1957) focuses on the explanatory power of the three (EPA) factor structure, accepting that these factors explain only 50% of the total phenomena known as “meaning”. As the remaining 50% is made up of an almost infinite number of variables, it would make explanation very difficult. Therefore this limitation has been accepted in the literature and the continued validation of the semantic differential technique supports its use (Hronsky and Houghton, 2001).

6.7.3 Experimental design

Research conducted under experimental conditions provides a stable environment from which the researcher can establish and test the phenomenon of interest, although, it has been suggested that this approach can restrict the generalisability of the results (Hronsky and Houghton, 2001). While this is acknowledged as a standard limitation of experimental research, this issue can be partly alleviated by making empirical observation in a natural setting while still obtaining the information under experimental conditions.

The current study addressed this issue by using a web-based instrument which allowed the researcher to control the experimental setting in which the research instrument was addressed without restricting the subjects from participating in a more natural setting (such as the time and place of their choice). The lack of physical presence of the researcher was compensated for through the controlled sequencing of the web-based instrument.⁵²

The level of training may also be a limiting factor in the current study. As the study was performed retrospectively to the introduction of NZ IAS 7, some subjects (or

⁵² Participants were restricted from scrolling back and forwards through the research instrument, requiring them to complete each task in isolation and in the order required.

subject groups) may have already attended training courses on NZ IAS 7 and may therefore have understood better the implications of subtle changes made to the definition of “cash”. This could result in inconsistency among the subjects and/or introduce definitional bias, where those who have already received training already understand the effect of the changes to the definition of “cash” and in completing the research instrument intuitively considering the new definition, irrespective of the definition allocated.⁵³

6.7.4 Decision outcomes

The addition of the decision outcome component to Hronsky and Houghton’s (2001) study contributed significantly to the literature in the area of measured meaning in accounting. However, a limitation is that the semantic differential technique was administered by group and not by decision case. Each research participant was presented with all 10 case scenarios and was only required to undertake the semantic differential technique once.

While this may have improved the sample size within each subject group by reducing participant’s time requirements it is believed to have reduced the effectiveness of statistical techniques employed to establish a link between the measurement of meaning and the decision outcomes.

Hronsky and Houghton (2001) had commented on this issue stating that:

“[t]he relationship between the factor scores and individual decisions is therefore a function of how much on average the total decisions changed because of the different decision rules. Therefore the variability in meaning in the rule will explain a relatively low proportion of the variability in the meaning of the rule and the case facts are combined, a very high proportion of the variance is explained.” (p. 133).

⁵³

Definitional bias is created when subjects are given one definition but continue to apply another definition already well established for that term or concept.

Hronsky and Houghton (2001) accepted this limitation and felt that increasing the number of semantic differentials could be problematic in that it could increase the level of subject resistance, boredom and fatigue.

A similar concern exists in the current study and may help explain the moderate results in this area. Therefore possible future research could test the above limitations by randomly splitting the subject group and requiring one half to complete an individual semantic differential before each case and the other half to undertake one for all cases. An alternative approach could be to increase the sample size and only issue one case per subject. However, while addressing the issue of boredom and fatigue it may result in insufficient case evidence to address hypotheses specific in this area of interest.

6.7.5 Case selection

While the 10 cases were based on issues noted in both the relevant accounting standards (FRS 10 and NZ IAS 7) and the literature (Jones et al., 1995) as being either accepted items of cash (as in the case of coins and notes) or controversial items (as in the case of gold bullion), they do not exhaust all possible types of items that may be seen as problematic for decision makers. This limitation was also raised by Wines (2006) but was believed to create an opportunity for future research, by reviewing other possible case information for decision outcome variability.

Chapter 7

Conclusion and Further Research

7.1 Introduction

This chapter provides a conclusion to the current study followed by a review of possible areas for future research. These include the expansion of the definition of preparers and users, the further development of relevant semantic scales, additional cases for decision outcomes, the use of the pilot study data for further research into shared cognitive structure and students as relevant surrogates for accountants, and the examination of further terms, concepts, phrases and statements.

7.2 Conclusion

Effective communication is seen as the cornerstone of accounting, allowing the preparers of financial statements to transfer vital information to the various users about the financial performance of an entity. A critical element of communication is that the sender and receiver are interpreting the information in a similar manner, ensuring that the informational content remains intact during the transfer process.

Poor communication in accounting can lead to intentional (creative or aggressive reporting practices) and unintentional miscommunication. Both types of miscommunication reduce the reliability of the financial statement and create concerns for the many parties to the financial reporting process.

The introduction of the cash flow statement in the late 1980s was believed to have improved the level of information provided to the many users of financial statements. A key element of the cash flow statement is that it presents information on the actual movements of cash in and out of an entity and is not open to subjective judgements like those applied under accrual based accounting practices.

While this statement is traditionally viewed as being more reliable than the balance sheet and income statement, recent concerns have been raised by a number of practitioners regarding this claim. These concerns have been highlighted by high profile collapses of large international companies in which the cash flow statement has fallen victim to aggressive reporting practices.

There is the belief that aggressive reporting practices can be minimised by clearly defining the terms and concepts used in the relevant accounting standards. It is this issue that was of interest to the researcher, considering the meaning of the concept “cash”, as defined in the relevant accounting standard. The primary objective of this study was therefore to establish empirically whether significant differences in connotative meaning exist between three key parties to the financial reporting process: preparers, auditors and users. The use of Osgood et al.’s (1957) semantic differential technique provided the method from which a large proportion of this research could be undertaken.

New Zealand’s recent move to IFRS provided a further motivation for this study, looking at the possibility of differences in the meaning of the concept “cash” as defined under the old and new accounting standards (FRS 10 and NZ IAS 7).

Prior research has extended the measurement of meaning research in accounting by reviewing the decision outcomes of various subjects when presented with the definition of specific accounting terms or concepts. This body of research also investigated the extent to which the decisions made by the subjects are linked to the measured meaning of the term or concept under investigation.

This issue was also considered in the current study, allowing the researcher to assess the impact that FRS 10 and NZ IAS 7 had on the overall decisions made by the three financial reporting groups, and the extent to which the observed changes in decisions were linked to the results of the measurement of meaning analysis.

A further aim of this research was to test each financial reporting group's perception of the overall *quality* of the definition of "cash" provided under the two definitions. This required the introduction of a new component to the research instrument which was developed for the purpose of this study, providing subjects with four statements regarding the overall *quality* of the cash flow statement as a result of the definition of "cash" they had been allocated.

Data for the study was collected using a web-based survey instrument, resulting in a usable sample of 170 subjects, across the three financial reporting groups. This resulted in a 38% response rate which was acceptable for the factor analysis used in the analysis stages of the study.

The results of the semantic differential technique provide empirical evidence to suggest that the preparer, auditor and user groups do not interpret the meaning of the concept of "cash" in the same way. It was also established that the preparer and auditor groups interpreted the meaning of the concept "cash" within a more complex (dimensional) cognitive structure than the user group (unidimensional), supporting prior research which had established a connection between the level of sophistication a subject had regarding the term or concept under investigation and the complexity of the cognitive structure in which the meaning of that term or concept is believed to be held. These results prevented intergroup comparisons from being made as a shared cognitive structure is required in order to assess the level of shared connotative meaning across subject groups.

The next stage of the study looked to establish whether differences in the meaning of the concept "cash" within each subject group existed between the old and new

definitions. The results indicated that a significant difference existed between the measured connotative meaning of the old and new definition of the concept “cash”, across all three financial reporting groups. This suggested that the preparers, auditors and users of the cash flow statement attach a different meaning to the concept of “cash” under NZ IAS 7 than they applied under FRS 10, therefore supporting the claim that the subtle changes in key wording to the definition of “cash” under NZ IAS 7 has resulted in a change in the meaning of that concept for all three financial reporting groups.

An investigation into the decision outcomes resulting from the definition of “cash” presented evidence to suggest that the changes to the definition also resulted in a change in decision outcomes for all three financial reporting groups. However, there appears to be weak evidence that these changes in decisions were linked to the measured meaning established earlier in the study.

The results of the final stage of the study, dealing with the perceived *quality* of the definitions, provide statistical evidence that the auditor and user groups perceived the new definition of “cash” to lead to a more consistent application in practice, is seen as being more precise, is believed to be less ambiguous and would result in more comparable financial statements. While the preparer group had also indicated a similar *shift* in understanding (their responses moving closer to these positions) statistical significance was not observed.

7.2.1 Implications of the research findings

There appears to be a number of theoretical and practical implications of the current study. These will now be discussed.

Theoretical Implications

While the results of the semantic differential technique did not conform to Osgood et al.’s (1957) three (EPA) factor structure it did provide sufficient evidence to support the prior validations of this technique for research in the area of measurement of

meaning in accounting. However, a recommendation for future research is that the 22 item semantic scale be further tested for suitability in modern accounting when dealing with concepts relevant to the cash flow statement as it may be possible that the existing scales are no longer sensitive enough to cater for the concept under investigation. This issue has been raised by Osgood et al. (1957) and Haried (1972) who both supported the ongoing review of the semantic scales to ensure that they are meeting the requirements of the terms and concepts under examination.

The evidence of the decision outcome analysis supported the alternate hypotheses that a change in the definition of the concept “cash” resulted in the three financial reporting groups making different decisions regarding the 10 cases under investigation. However, the limited connection between the change in connotative meaning and the decision outcomes leads the researcher to believe that the method used to test this link may require further adaptation to provide any theoretical benefit to this area of research. While prior studies have established this link (e.g., Hronsky and Houghton, 2001; Wines, 2006), they have also commented on the relatively limited amount of evidence to support this connection, with the key limitation being the inability of a single completed semantic differential to provide sufficient variability when the subjects are faced with a number of case examples to consider.

The results addressing the perceived *quality* of the two definitions of “cash” has added to the accounting literature by providing a connection between changes to the wording of key terms and concepts and the resulting impact it is believed to have on the financial statements in general. The method used to establish the results of the current study would appear to validate this process for use in future research, establishing a mechanism for testing this type of independent variable.

This section of the current study provided an important contribution to the literature as no other study in the area of measurement of meaning in accounting has attempted to assess the impact that a change in a definition has on the overall perceived quality of the financial statement under review.

Practical Implications

The results of the current study indicate that the three key parties to the financial reporting process do not share the same cognitive structure in which the meaning of the concept “cash” is held. The implications of this result are that the meaning of the concept “cash” is also not shared between these parties which raise concerns about the effectiveness of the communication between these key parties to the financial reporting process. This lack of sender receiver clarity could result in the misallocations of capital resources as the decisions made by the users are based on their understanding of the information and not on any unified basis. The reliability of the cash flow statement could be limited by this fact, raising questions about its susceptibility to intentional and unintentional miscommunication.

The results of the decision outcome analysis has confirmed that subtle changes in the wording of key accounting terms and concepts may lead to different decisions being made by preparers, auditors and users. This issue should be considered by standard-setters when looking at amending or introducing new definitions or accounting standards as such changes in meaning may not necessarily be intentional. Also, given that the users are believed to hold the meaning of the concept “cash” within a simple or unidimensional structure compared to the more complex structure identified for the preparer and auditor group, the subtle changes could result in extreme variability in decision outcomes across the three groups.

In general, the inability of financial statements to convey the required meaning could result in “distortions” which could impact on the decisions made by the receiver of that information. Given the significant variability in both the changes in measured connotative meaning and the decision outcomes resulting from a relatively simple concept as “cash”, raises even greater concern for more complex terms, concepts, phrases and statements within accounting.

7.3 Further Research

There are several possible avenues for future research. As well as those already discussed in Chapter 6, Section 6.7, the researcher has also identified the following.

7.3.1 *Expand the definition of preparers and users*

A possible area for future research may be to expand the definition of preparers and users to include other parties to the financial statement preparation and reporting process. This could include directors, senior managers and Chief Executive Officers as representatives for preparers and government agencies (e.g., Inland Revenue Department), unions, suppliers and loan officers as users. This was supported by Wines (2006) who suggested that future studies should target a wider range of experienced parties when assessing important terms or concepts used in the financial reporting process.

7.3.2 *Semantic scale development*

The semantic differential technique has been extensively used and tested in many disciplines (including accounting) but has not been used to measure the meaning of the concept “cash”, as interpreted by the three financial reporting groups, preparers, auditors and users. Accordingly, some suggestions for future research could include a reanalysis of the semantic scales relevant to the measurement of connotative meaning surrounding terms, concepts, phrases and statements in the cash flow statement. As the results of this study and others (e.g., Houghton and Messier, 1991; Wines, 2006) only partially conformed to the three (EPA) factor structure established by Osgood et al. (1957), further analysis may be required to determine whether the 22 item semantic scale continues to remain sensitive enough for measuring meaning in modern accounting.

7.3.3 Case development

Hronsky and Houghton (2001) had accepted the limitations of the cases used in their study when looking at the decision outcomes of the different subjects. They were concerned about the effect that different economic incentives had on the decision making process and therefore suggested that a wider range of cases be included in future studies of this nature. For this reason the current study increased the case selection in Tasks (2) and (3) to 10 cases. However, given the significant range of possible case items that may be arduously defined as “cash” under the two definitions, further controversial case items may provide additional support to this area of study.

7.3.4 Cognitive structure and surrogates

The pilot study undertaken in the current study consisted of 122 third year undergraduate students studying accounting theory at the University of Canterbury.⁵⁴ The pilot study was administered under the same conditions to the actual live study, resulting in approximately 60 subject responses under the old definition of “cash” and 62 responses for the new definition of “cash”.⁵⁵ While this pilot study was used to assess the administrative effectiveness of the research instrument it provided valuable data which could be used in a future study.

One area of interest to the researcher is the belief that students can be useful surrogates in accounting research (Ashton and Kramer, 1980). Prior research in the area of measurement of meaning has supported this proposition, noting “...on the evidence of the present study...students were adequate surrogates in mapping out the dimensions of the cognitive structure within which meaning in accounting is held...” (Houghton and Hronsky, 1993, p. 142).

Houghton and Hronsky’s (1993) study looked at the measured meaning between accounting students and practising accountants. They suggested that future research in this area could provide evidence to support the use of students as surrogates in

⁵⁴ See Chapter 4, Section 4.4.1 for a discussion on the pilot test.

⁵⁵ The total subject group was randomly split using the course registration list. The response rate was 91%.

accounting research and recommended extending future studies to include possible implications on decision outcomes (p. 143).

7.3.5 Additional terms, concepts, phrases and statements

The most obvious area for future research is to consider other terms, concepts, phrases and statements within the cash flow statement. Areas of interest may include a cross definition measurement of meaning between the phrases, “net cash from operating activities”, “net cash used in investing activities” and “net cash used in financing activities” (NZ IAS 7). The implications of these three phrases could be considered when looking at the decision making behaviour of subject groups, as there are several areas of uncertainty surrounding specific components within these categories (e.g., interest expense, dividends paid, gains and losses on the sale of fixed assets, taxes paid).

There is also a need to continue to search for other possible terms and concepts that have either changed or have been introduced for the first time as a result of the move to IFRS. More controversial terms and concepts include, “fair value”, “materiality”, “impairment”, “sustainable development” and “intellectual capital”, all of which are raised as issues of uncertainty in the literature.

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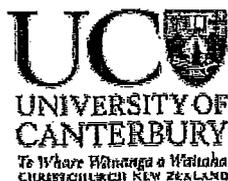
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Appendix A

Research Instrument

The Concept of Cash Survey 2007 A

0% | 100%

010 Welcome

WELCOME

IMPORTANT NOTICE TO SURVEY PARTICIPANTS



ON THE COMPLETION OF THIS SURVEY YOU WILL BE ELIGIBLE TO ENTER THE DRAW FOR A CASE OF Church Road Chardonnay, 2005, VALUED AT OVER \$300.00.

INTRODUCTION

Thank-you for participating in the following accounting survey. This survey is part of a larger body of research looking at the impact of changes in accounting terms and concepts brought about through New Zealand's recent move to International Accounting Standards.

This survey addresses the concept of "**CASH**", as it relates to the cash flow statement.

The survey should take approximately **4 to 5 minutes** to complete and all responses will remain **anonymous**. There is also no right or wrong answer for most questions.

INSTRUCTIONS

The purpose of this survey is to research your **interpretation** of a specific accounting concept. The survey is based on an approach normally applied in the study of **meaning**, so some questions may appear a little odd. Please bear with the questions and indicate your opinion as accurately as you can. There is also no right or wrong answer to most questions so please ensure that you answer each question using your own interpretation and knowledge.

This survey consists of **FOUR** Tasks followed by a general information section (for statistical purposes only). Each Task relates to the same

020 Introduction Task 1

Task 1

Instructions

The task below requires you to first review the specific accounting concept "CASH", as it relates to the cash flow statement, prepared according to FRS 10: Statement of Cash Flows. You are then required to rate this concept in relation to a series of opposite adjective scales (e.g. STRONG : WEAK).

Please indicate your INITIAL response to each of the scales provided by CLICKING the circle that best characterises your response:

For example:

If you feel that the accounting concept tends to be very EXACT, indicate as follows:

EXACT ● ○ ○ ○ ○ ○ ○ ESTIMATED

If you feel that the accounting concept tends to be moderately EXACT, indicate as follows:

EXACT ○ ○ ● ○ ○ ○ ○ ESTIMATED

If the concept has some meaning to you but the scale does not appear to be relevant to the concept, click the mid-point of the scale.

EXACT ○ ○ ○ ● ○ ○ ○ ESTIMATED

[[Exit and Clear Survey](#)]

next >>

040 Task 2

Accounting Concept: "CASH" – As it relates to the cash flow statement

Definition provided in FRS 10

"CASH" includes:

- Coins, notes, demand deposits and other highly liquid investments in which an entity invests as part of its day to day cash management.
- Borrowings from financial institutions such as bank overdrafts, where such borrowings are at call and are used as part of day-to-day cash management

Please review items 1-10 below and indicate whether or not you believe they fit the concept of "CASH", as it relates to the cash flow statement, by CLICKING on "Yes" or "No".

*

	Yes	No
1. Coins and notes on deposit	<input type="radio"/>	<input type="radio"/>
2. Accounts receivable	<input type="radio"/>	<input type="radio"/>
3. A four month treasury bill	<input type="radio"/>	<input type="radio"/>
4. Reserve bank bill	<input type="radio"/>	<input type="radio"/>
5. Gold bullion	<input type="radio"/>	<input type="radio"/>
6. Readily tradable equity securities	<input type="radio"/>	<input type="radio"/>
7. A three month futures contract	<input type="radio"/>	<input type="radio"/>
8. Non-cash payments for goods and service (Barter)	<input type="radio"/>	<input type="radio"/>
9. On-call bank overdraft	<input type="radio"/>	<input type="radio"/>
10. Preference shares redeemable in three months for a fixed amount of cash	<input type="radio"/>	<input type="radio"/>

050 Task 3

Accounting Concept: "CASH" – As it relates to the cash flow statement

Definition provided in FRS 10

"CASH" includes:

- Coins, notes, demand deposits and other highly liquid investments in which an entity invests as part of its day to day cash management.
- Borrowings from financial institutions such as bank overdrafts, where such borrowings are at call and are used as part of day-to-day cash management

Please indicate the DEGREE (1 to 6) to which you believe the following items represent an item of "CASH", as it relates to the cash flow statement.

	Clearly an item of CASH 1	2	3	4	5	Clearly NOT an item of CASH 6
1. Coins and notes on deposit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Accounts receivable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. A four month treasury bill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Reserve bank bill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Gold bullion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Readily tradable equity securities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. A three month futures contract	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Non-cash payments for goods and service (Barter)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. On-call bank overdraft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Preference shares redeemable in three months for a fixed amount of cash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

055 Task 4

Please indicate the degree to which you **agree** or **disagree** with the following statements:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
* 1. The use of the definition of cash referred to in this survey will lead to consistent application in practice.	<input type="radio"/>				
2. The definition of cash referred to in this study seems imprecise.	<input type="radio"/>				
3. Preparers of financial statements face little ambiguity when applying the definition of cash referred to in this survey.	<input type="radio"/>				
4. The definition of cash referred to in this study ensures comparability between and within company financial statements.	<input type="radio"/>				

[Exit and Clear Survey]

next >

060 General Information

***Age Group:**

Under 18	18 - 25	26 - 30	31 - 35	36 - 40	41 - 60	Over 60
<input type="radio"/>						

***Number of years as an Auditor**

Less than 3	3 - 5	6 - 10	11 - 20	Over 21
<input type="radio"/>				

***Current Location (Town or City)**

***Highest academic qualification**

<input type="radio"/>	PhD	Masters Degree	Bachelors Degree (with Honours)	Bachelors Degree	Other (please specify)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Professional qualification(s)

[Exit and Clear Survey]

next >>

070 Prize Draw**PRIZE DRAW**

Thank-you for completing the above survey. To enter the **PRIZE DRAW** you must provide your name and your preferred contact email address below.

Please be aware that your contact details are **not linked to your responses** to the survey. All contact details will be deleted once the prize draw is completed.

CONTACT DETAILS: Name: <input type="text"/>
--

Email address: <input type="text"/>
--

The winner will be notified by 10 September 2007. A failure to receive notification will mean that you have not won.
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I confirm that I am aged 18 years or over. <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> No answer

[\[Exit and Clear Survey\]](#)

 last

Appendix B

Specimen E-mail

To: XXXXXXXXX

From: XXXXXXXXX

Subject: Accounting Research Questionnaire

My name is Tony Mortensen and I am an Assistant Lecturer at the University of Canterbury (Department of Accountancy, Finance and Information Systems). I am conducting research into the "measurement of meaning in financial accounting" and would appreciate your participation in a brief survey.

Attached below is a WEB ADDRESS for an on-line survey. Key features of the survey are:

- It will take no more than 5 minutes to complete
- All responses are ANONYMOUS
- You will be entered into a PRIZE DRAW
- There are no wrong or right answers to most questions
- Over 90% of the survey asks for "TICK BOX" answers only

To complete simply CLICK the web address below and read the instructions carefully.

Thank you for your support.

Web-Link:

SurveyB