

Digitales Brandenburg

hosted by Universitätsbibliothek Potsdam

Interpretation of uncertainty expressions

**Doupnik, Timothy S.
Richter, Martin**

Potsdam, 2000

Related Literature

urn:nbn:de:kobv:517-vlib-4850

professional accountants in the United States and in German-speaking countries have similar meaning. To our knowledge, this is the first study of uncertainty expressions to use professional accountants in more than one country.

Hypotheses based on cultural relativism and translation effects are tested using data gathered through a field experiment. The answer to the research question is important to the viability of using a single set of accounting standards worldwide. The selection of the United States and Germany as countries to study is relevant because these two countries are important for the process of worldwide harmonization. The study is also timely from a U.S. perspective as the Securities and Exchange Commission (SEC) debates whether foreign registrants should be allowed to use IAS in preparing financial statements without reconciliation to U.S. GAAP.

The remainder of this paper is organized into six sections. The first section provides a review of related studies in the psychology and accounting literatures, and includes a discussion of culture and linguistic relativism. The second section describes the uncertainty expressions examined in the study. The third section presents the specific research questions and hypotheses tested. The fourth section describes the research methodology, and the fifth section presents the analysis and results. The final section provides a summary and offers conclusions.

RELATED LITERATURE

Psychology Research

A considerable amount of research has been conducted and reported in the psychology literature investigating the quantitative meanings of verbal probability expressions (e.g., Simpson, 1963; Lichtenstein and Newman, 1967; Beyth-Marom, 1982; Budescu and Wallsten, 1985; Reagan, Mosteller, and Youtz, 1989). More than 280 different probability expressions

have been examined with only a small subset examined in any one study. The predominant method of assessing the meaning of a probability expression has been to ask subjects to provide a percentage from 0 to 100 that corresponds to it (Reagan, Mosteller, and Youtz, 1989). Results consistently show a large degree of between-subject variability (Budescu and Wallsten, 1985). This variability has been found to be inversely related to the distance from the center of the scale (Wallsten, *et al*, 1986). The variability has been found to be lower in groups from homogeneous backgrounds (Brun and Teigen, 1988), and expressions embedded in context exhibit more variability than those in isolation (Beyth-Marom, 1982).

Results reported in the psychology literature also show a lack of symmetry (Budescu and Wallsten, 1985). That is, probabilities assigned to mirror-image pairs such as "probable" and "improbable" do not sum to 100 percent (Lichtenstein and Newman, 1967). Negative probability expressions tend to be further away from the 50 percent midpoint than the related positive expressions (Reagan, Mosteller, and Youtz, 1989).

The variability in responses to uncertainty expressions can be due to (a) the vague meaning of the expressions or (b) the fact that the meaning of probability terms is not constant across individuals. The results of Wallsten, *et al* (1986) support the notion that non-numerical probability expressions convey vague uncertainties; the vagueness can be attributed to the use of a verbal expression and not to the perceived uncertainty. They suggest that people not only understand uncertainty expressions as representing amounts of probability but also as representing degrees of confidence in that probability.

Phillips and Wright (1975) introduced the notion that culture can influence the cognitive processes involved in probability assessment. They hypothesized that English people (who have

a “probabilistic” world-view) would make finer discriminations in degrees of uncertainty than would Chinese people (who have a “fatalistic” world-view) and that numerical assessments of probabilities would be more meaningful for the English than for the Chinese. Their experimental results generally support their hypotheses.

Accounting Research

Much of the research on uncertainty expressions in the accounting domain relates to the interpretation of the uncertainty expressions used in FASB Statement of Financial Accounting Standards (SFAS) No. 5 for determining when a contingency should be recognized or disclosed. SFAS 5 requires no disclosure when the contingent loss is “remote”, footnote disclosure when it is “reasonably possible”, and financial statement recognition when the contingent loss is “probable.”

Schultz and Reckers (1981) found that auditors' interpretations of SFAS 5 expressions were affected by the materiality of the potential loss, and that the variability of responses was reduced after individuals were involved in group processing of the disclosure issue. Jiambalvo and Wilner's (1985) results show considerable between subject variability in assignment of probability ranges to the words “remote,” “reasonably possible,” and “probable.” Subsequent analysis implied that the variability was due to different interpretations of the words rather than in an inability to express feelings in terms of probabilities. In contrast to Schultz and Reckers, they did not find materiality of loss to affect decisions regarding disclosure. Harrison and Tomassini (1989) examined auditors' interpretations of probability thresholds for “remote”, “reasonably possible,” and “probable” across different types of contingencies. They found little difference in thresholds across the various contingencies although there was less consensus about

the threshold between "remote" and "reasonably possible."

Chesley (1986) conducted two experiments with accounting students to address several questions related to the interpretation of uncertainty expressions. Consistent with results in the psychology literature, he found a low degree of group consistency for most expressions and a lack of symmetry in complementary words.

Reimers (1992) conducted an inter-group study to determine whether samples of auditors, engineering managers, marketing managers, and graduate students interpret 30 uncertainty expressions, including those of SFAS 5, in the same way. She found that many of the expressions were interpreted as synonyms. She also found that the range of probability covered by the three expressions in SFAS 5 indicates a range of uncertainty between "remote" and "reasonably possible" not covered by those expressions. Using both practicing accountants and accounting students, Davidson (1989) found similar results and he concluded that the SFAS 5 set of probability expressions is not optimal. He suggested that "reasonably possible," which is perceived as quite similar to "probable," should be replaced with a term such as "sometimes" that might better convey a level of probability that is closer to the midpoint between "remote" and "probable."

Amer, Hackenbrack, and Nelson (1994) asked auditing managers to provide numerical interpretations of 23 uncertainty phrases placed in an auditing context. They also found that multiple phrases have similar numerical interpretations. Similar mean results were obtained for six phrases common with Reimers, even though her study was not in context. Amer, Hackenbrack, and Nelson (1994) also found that the inter-subject variability inherent in assigning probability to uncertainty expressions decreased when moving from phrases that

communicate low probabilities to those that communicate high probabilities.

To test whether the mental representation of uncertainty phrases is affected by the language in which they are expressed, Davidson and Chrisman (1993) examined the interpretation of uncertainty expressions found in International Accounting Standards between Anglophone and Francophone accounting students in Canada. They suggested that differences in mental representations can exist in two ways. Either the mean probability associated with an uncertainty expression is not the same in each language, indicating a difference in the concept conveyed by the expression, or the degree of consensus on the probability associated with an uncertainty expression is not the same in each language, indicating a difference in the precision of the expression. Davidson and Chrisman (1993) compared mean probabilities assigned to the English original and French translation and found differences in 13 of 27 expressions examined. In addition, they found significant differences in the variance of the probabilities for 14 of the 27 expressions, with the English expressions generally having lower variance. The authors infer from this result that the English expressions convey a more precise meaning than the French equivalent. In a related study, Davidson and Chrisman (1994) found similar results for uncertainty expressions utilized in Canadian accounting and auditing standards.

The work of Davidson and Chrisman suggests that the translation of uncertainty phrases from one language to another can lead to non-similar interpretations by two different linguistic groups located in the same country. The current study addresses the related question of whether different linguistic groups in different countries interpret uncertainty expressions similarly. By including different nationalities in the study, national culture is introduced as an additional factor that could affect these interpretations. The following section considers literature in the areas of

culture and psycholinguistics to develop arguments as to why and how nationality might affect these interpretations.

Culture and Linguistic Relativism

National culture is thought to be an important environmental factor influencing a country's accounting system (Mueller, 1967; Violet, 1983; Harrison and McKinnon, 1986; Gray, 1988) and empirical studies show this to be generally true (Frank, 1979; Doupnik and Salter, 1995; Salter and Niswander, 1996; Zarzeski, 1996). Culture has also been shown to affect the design and/or effectiveness of management control systems (Harrison, 1993; Chow, Kato, and Merchant, 1996; Chow, Shields, and Wu, 1999). (See Harrison and McKinnon, 1999, for a review of the literature on management control systems and culture.) The issue at hand, however, is whether culture affects the interpretation by accountants of accounting standards, in general, and uncertainty expressions within those standards, in particular.

Riahi-Belkaoui and Picur (1991) developed a theoretical justification for the effect culture might have on the perception of accounting concepts. Using a cognitive orientation to culture, they suggest that national cultures act as networks of subjective meanings or frames of reference shared by members of the culture. As such, national culture could influence the way members of that culture perceive basic accounting principles such as "going concern" and "matching." Perceptions of accounting principles varied among samples of U.S., Canadian, and British auditors in their empirical tests.

Bagranoff, Houghton, and Hronsky (1994) suggested that cross-cultural differences may affect the meaning associated with, and hence judgment in applying, accounting standards. They found differences in cognitive structures related to the concept "extraordinary items" between

U.S. and Australian auditors.

These studies show that national membership can affect perceptions of accounting specific principles and concepts. These results do not necessarily imply, however, that national culture will affect interpretations of more general words and phrases commonly found in uncertainty expressions such as "probable" and "remote." The link between national culture and the perception of general concepts can be made by considering one very important aspect of culture--language.

Language and culture are interrelated. Sapir (1964) argues that the perfection of language is a prerequisite for the development of a culture as a whole, and that language is the verbal expression of a culture. Belkaoui (1989) suggests that language is indicative of the "metaphysics" of a culture which consist of "unstated premises which shape the perception and thought of those who participate in that culture and predispose them to a given mode of perception" (p. 283). Indeed, in previous accounting research, language has been used as a surrogate for culture (Frank, 1979; Nair and Frank, 1980).

Linguistic relativism relates to the role language plays in our understanding of the world. The grammatical forms and categories provided by a language are thought to affect the manner in which speakers of a given language interpret the world (Sapir, 1964; Whorf, 1956). In other words, a given language predisposes its users to a distinct belief (Belkaoui, 1989).

Monti-Belkaoui and Belkaoui (1983) tested the hypothesis derived from linguistic relativism that different languages result in different meaning being attached to basic accounting principles. Using Anglophone and Francophone students in Canada as subjects, their results support the notion that speakers of different languages perceive basic accounting concepts

differently, even though both groups were members of the same national culture. They also found that bilingual speakers of both languages were different from either unilingual group.

The theory of linguistic relativism suggests that a specific language could predispose its speakers to distinct interpretations of uncertainty expressions and that different languages could lead to different interpretations of uncertainty expressions. As language is intertwined with culture, this leads to the notion that members of different national cultures with different languages, i.e., different language-cultures, could differ in the meaning attached to uncertainty expressions.

The countries selected in this study have different languages (English and German) and have been classified as being members of two distinctly different cultural areas (Anglo and Germanic) (Hofstede, 1980). The question arises whether the different language-cultures in which U.S. Certified Public Accountants (CPAs) and German-speaking Wirtschaftsprüfer (WPs) live and work affects their perception and interpretation of uncertainty expressions found in IAS. The IAS uncertainty expressions examined in the current study are described in the next section.

IDENTIFICATION OF UNCERTAINTY EXPRESSIONS

The official language of the IASC is English and IAS are published in that language. In 1997, the IASC produced an official German translation of the 33 extant IAS (Schäffer-Poeschel, 1998). This was the first and, at the time, only official translation of IAS into another language. An examination of these standards resulted in the set of 16 uncertainty expressions used in this study (see Table 1). Table 1 indicates that there is some difficulty in translating certain English expressions into German. For example, the single word "remote" is translated into the three-word phrase "Wahrscheinlichkeit äußerst gering" (literal translation = "probability extremely