Scenarios in Business Ethics Research: Review, Critical Assessment, and Recommendations

Author(s): James Weber

Source: *Business Ethics Quarterly*, Apr., 1992, Vol. 2, No. 2, The Empirical Quest for Normative Meaning: Empirical Methodologies for the Study of Business Ethics (Apr., 1992), pp. 137-160

Published by: Cambridge University Press

Stable URL: https://www.jstor.org/stable/3857568

SCENARIOS IN BUSINESS ETHICS RESEARCH: REVIEW, CRITICAL ASSESSMENT, AND RECOMMENDATIONS

James Weber

Abstract: A growing number of researchers in the business ethics field have used scenarios as a data gathering technique in their empirical investigations of ethical issues. This paper offers a review and critique of 26 studies that have utilized scenarios to elicit inferences of ethical reasoning, decision making, and/or intended behavior from managerial or student populations. The use of a theoretical foundation, the development of hypotheses, various characteristics germane to the use of scenarios, population and sampling issues, and the use of statistical measures are explored and assessed. In the interest of improving scenario-based research, ten recommendations are presented to guide future scenario research.

EMPIRICAL research in the business ethics field has utilized a number of techniques to elicit from a respondent his or her beliefs, preferences, intentions, reasoning, judgment, or intended behavior regarding ethical issues. One of these techniques, scenarios, has been frequently used by researchers to measure ethical reasoning (Fritzsche & Becker, 1984; Weber, 1990), to assess ethical judgments or decision-making preferences (Akaah, 1989; Baumhart, 1961; Brenner & Molander, 1977), and to determine a subject's intent to behave in an ethical or unethical manner (Laczniak & Inderrieden, 1987; Stead, Worrell, Spalding & Stead, 1987; Zinkham, Bisesi & Saxton, 1989). Scenarios have played an integral role in empirical business ethics research.

Due to their importance, this paper begins by presenting a brief historical background regarding the use of scenarios in empirical research. The major focus is a review and critique of previous business ethics research which utilized scenarios as a data gathering technique. The review and critique identify exemplary research efforts as models for future projects using scenarios, as well as providing suggestions to improve other works in the field. Based upon the review and critique, recommendations are made to guide future business ethics researchers using scenarios. If scenario-based research is to continue making a substantial contribution toward furthering our understanding of individuals' decision-making processes and intended behavior regarding ethical issues, these recommendations should be implemented. The develop-

©1992. *Business Ethics Quarterly*, Volume 2, Issue 2. ISSN 1052-150X. 0137-0160.

ment from simplistic, exploratory research to sophisticated, solidly-based research designs may enhance the value of utilizing scenarios and may increase the knowledge gained from this type of ethics research.

Historical Background

Scenarios, or vignettes as they are sometimes called, are defined as "short descriptions of a person or a social situation which contain precise references to what are thought to be the most important factors in the decision-making or judgment-making processes of respondents" (Alexander & Becker, 1978:94). The social science roots of scenario-based research can be traced to Star (1955) and her efforts to assess the general public's recognition of mental disorders. Numerous other social scientists followed Star in their use of scenarios in exploring jury decision making (Landy & Aronson, 1969), attribution of fault in criminal assault and accident cases (Jones & Aronson, 1973; Shaw & McMartin, 1975), perception of social status (Nosanchuk, 1972), and social attitudes (Burstin, Doughtie & Raphaeli, 1980).

The earliest published use of scenarios in business ethics research is found in Baumhart's (1961) classic study of business managers' values and ethics. Baumhart and his associates developed a series of scenarios containing ethical issues to elicit from corporate managers their intended behavioral responses. Clark (1966) followed by constructing 17 scenarios embodying ethical issues. Through a review of the business ethics, general management, marketing, and social psychology literature, 24 additional empirical studies were identified which utilize scenarios when exploring business ethics issues. A list of the authors and dates of publication of these 26 studies is presented in the Appendix. Sixty-five percent (17 studies) were published after 1985, predominantly (11 of 17) in the *Journal of Business Ethics*.

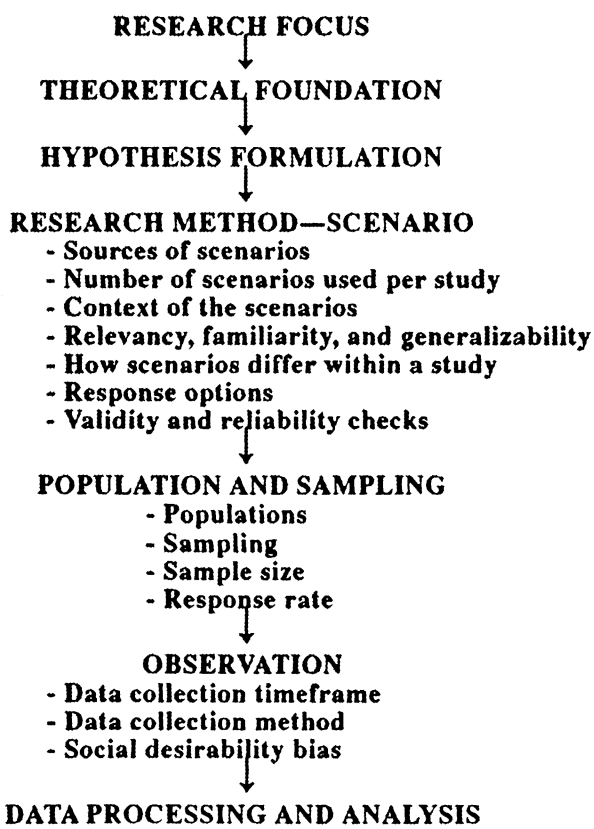
Despite the substantial use of scenarios in business ethics research, only one review focusing upon this data gathering technique (Cavanagh and Fritzsche, 1985) has appeared. These authors strongly supported the continued use of scenarios and cite numerous advantages. They note that scenarios allow the researcher to frame the research question to incorporate complex, multidimensional issues reflecting decision making in the real world. In addition, scenarios can emphasize critical aspects that are of special interest to the researcher. Since scenarios have been previously used in business ethics research (Cavanagh and Fritzsche acknowledge the work of Baumhart, Clark, and others), there is the possibility for replication studies and the relative ease of cross-study comparisons. They see scenarios as a catalyst to control multiple variables in an experimental laboratory setting. [Alexander and Becker (1978) more fully develop the idea of multiple variable manipulation through the use of scenarios.] Finally, Cavanagh and Fritzsche contend that construct validity is obtainable when using scenarios, as evidenced by the work of Fritzsche and Becker (1984). Although the authors identify and briefly describe some limitations in using scenarios, Cavanagh and Fritzsche's review is very positive. As the majority of business ethics

research using scenarios was published after 1985, this paper updates the earlier work undertaken by Cavanagh and Fritzsche by providing a systematic and in-depth review of business ethics studies which have used scenarios.

Review and Critique

In order to systematically review the 26 empirical business ethics studies which have used scenarios, an adaptation of Babbie's (1989) design of the research process is used. Depicted in Figure 1, this overview allows one to isolate the seven major components of the research process: research focus, theoretical foundation, hypotheses formulation, selection of a research method (scenarios), population and sampling, observation, and data processing and analysis. A similar adaptation was used by Randall and Gibson (1990) in their review of business ethics research methodology.

FIGURE 1
The Research Process
(adapted from Babbie, 1989)



Research Focus

Scenarios have been used to elicit responses in many aspects of business ethics research, including the decision-maker's reasoning process (Fritzsche & Becker, 1984; Weber, 1990), ethical decision or judgment (Baumhart, 1961; Brenner & Molander, 1977) and intended ethical or unethical behavior (Laczniak & Inderrieden, 1987; Zinkham, Bisesi & Saxton, 1989). Using scenarios for replication studies is less common as a research focus. Only one study clearly stated the intention of conducting a replication. Brenner and Molander (1977) presented the identical set of scenarios to a group of *Harvard Business Review* subscribers in 1977 in order to replicate Baumhart's 1961 study.

In general, empirical research using scenarios appears to be indicative of an emerging field of inquiry, since much of the research is exploratory and little replication work has been undertaken. In addition, research tends to focus upon isolated aspects of the overall ethical framework of decision making and behavior. The respondents' reasoning, decision making, or intended behavior has been assessed, rather than the entire integrated ethical decision process. These findings should not come as a surprise. Since most of the research has been published since 1985, this field has yet to develop a critical mass of empirical research on which to base integrative research or replication studies. However, in order for the field to develop, the emergence of these types of studies to further validate the use of scenarios as an important research technique in business ethics research must occur.

Theoretical Foundation

A glaring weakness of scenario-based research was discovered in the review of the 26 studies: little consistent theoretical foundation for empirical research. As shown in the Appendix, only 12 studies (54%) indicate or present a theoretical foundation from which to base the empirical assessment undertaken in the research. Unfortunately, this finding is generally consistent with research in the overall business ethics field. Randall and Gibson (1990) found that only 64 percent of the studies in their review presented a theoretical foundation for research.

The few studies that provide a theoretical foundation for empirical research may serve as valuable examples for future research. Barnett and Karson (1987) use gender theory to explain gender differences prior to their investigation of these differences using scenarios. Theoretical foundations for empirical research in business ethics have been adopted from organization theory (Dubinsky & Ingram, 1984; Laczniak & Inderrieden, 1987), ethics theory (Fritzsche & Becker, 1984), and moral development theory (Weber, 1990; Weber & Green, 1991).

Given the recent emergence of theoretical models in the business ethics literature (Bommer, Gratto, Gravander & Tuttle, 1987; Brady, 1985; Jones, 1991; Trevino, 1986), empirical research to test the assumptions and propositions of these models is desirable and possible. Others (Dubinsky &

Loken, 1989) have begun to use models from related social science fields (e.g., Fishbein and Azjen's *Theory of reasoned action* from social psychology) as a foundation for empirical research. A critical review of social psychology and moral psychology theories by Payne and Giacalone (1990) supports the appropriate and advantageous use of these theories in business ethics research. The emergence of new business ethics models and the utilization of social science theories and models may increase the frequency of theory-based empirical research using scenarios.

In addition, the common outlets for publication in the business ethics field appear to be receptive to theory-based empirical research. Business ethics-specific journals (e.g., *Journal of Business Ethics*, and more recently, *Business Ethics Quarterly*), general management publications (e.g., *Human Relations* and *Journal of Business Research*), marketing journals (e.g., *Journal of Marketing*) and social psychology journals (e.g., *Journal of Social Behavior and Personality*) have published scenario-based research and encourage empirical research firmly grounded in theory. However, no one journal appears to be a better target for theory-based research, and studies without a theoretical basis also are published in many of these journals.

Hypotheses Formulation

Given that less than half of the studies are theory-based empirical research, it was not surprising to find another weakness: a limited number of studies developed testable hypotheses. As identified in the Appendix, 21 studies (81%) do not provide testable *a priori* hypotheses as a focus for the empirical research. The five exceptions to this finding (Barnett & Karson, 1987; Bellizzi & Hite, 1989; Dubinsky & Ingram, 1984; Harris, 1989; and, Weber & Green, 1991) provide examples for future studies to emulate. In the study conducted by Barnett and Karson, literature drawn from feminist, moral development, organizational socialization, values, and ethical decision-making theories provide the bases for the researchers' six hypotheses focusing upon gender and relationships in a business ethics context. Similarly, Dubinsky and Ingram used various organization theories to develop hypotheses to test the degree of influence of forces upon ethical conflict faced by the employee. The few studies using scenarios that develop testable *a priori* hypotheses present a positive direction for future scenario-based research.

The lack of hypotheses development in the majority of previous scenario-based studies is another indication of an emergent field of research. Exploratory research predominates scenario-based business ethics investigations. This phenomenon is not particular to scenario-based research, since Randall and Gibson (1990) found that 75 percent of their sample of empirical business ethics studies failed to present hypotheses.

If the field is to develop and research designs to improve, researchers must make a conscious effort to move beyond the "let's see what we find" focus of exploratory research to a more systematic, grounded form of hypotheses

testing. Theoretical models from the business ethics literature, as well as the theories and models from social science applicable to business ethics research mentioned in the previous section of the paper, can serve as sources for testable *a priori* hypotheses.

Research Method - Scenarios

Sources of scenarios. It is encouraging to find that 62 percent of the studies (16 studies) utilized scenarios from previous work in the field. While the motives for these decisions are unclear, the convenience of using existing scenarios and the difficulty of developing and validating new scenarios may be factors.

The original set of scenarios developed by Clark (1966) to assess managers' moral standards was used by both Arlow and Ulrich (1980) and Stevens (1984) to discover students' and managers' ethical perceptions. As seen in this example, the utilization of the same scenarios in more than one study allows for cross-study comparisons and may further validate the scenarios. Other sources of scenarios can be found in Dubinsky and Ingram (1984), who have constructed marketing-oriented dilemmas, Fritzsche and Becker (1983, 1984), who emphasize particular ethical issues embodied in pairs of scenarios, and Weber (1990), who developed two business dilemmas with follow-up questions that subtly alter the circumstances of the stories. Researchers should avoid the "let's reinvent the wheel" mentality and use well-constructed, validated scenarios from previous research if possible.

Number of scenarios used per study. The number of scenarios used in the 26 studies reviewed cover a wide range. The use of only one scenario by Grant and Broom (1988), Stead, Worrell, Spalding and Stead (1987), and Weber and Green (1991) is contrasted with Arlow and Ulrich's (1980) use of 18 scenarios. The number of scenarios used generally cluster into three groups: less than 5 (10 studies), 9 to 11 (8 studies), and 14 to 18 (8 studies). As indicated by the distribution of the studies, no one cluster predominates.

The assessment of the proper number of scenarios is highly dependent upon the research purpose and the length and content of the scenarios. While trade-offs in research are often necessary and there is no "ideal" number of scenarios to be used in every study, researchers should be cautious of having too few scenarios, as well as having too many. Too few scenarios could limit the researcher's ability to manipulate critical variables and could result in responses biased by the few issues contained in the scenarios presented. For example, Grant and Broom (1988) and Posner and Schmidt (1987) address the question of hiring a competitor's salesperson to acquire privileged information. Neither study questions the possible biases that may be inherent in this particular ethical dilemma, nor is it clear that results similar to those found in these studies would be discovered if a different ethical dilemma were used. Similar concerns can be raised regarding the use of a kickback dilemma by Stead *et al.* (1987) and the dilemma focusing upon an alleged cover-up of an illegally-made loan used by Weber and Green (1991).

At the other extreme, too many scenarios could lead to information overload and fatigue for the respondent. Arlow and Ulrich (1980) and Stevens (1984) utilize Clark's (1966) set of 17 scenarios, yet neither study assesses the impact that the volume of scenarios used may have had upon the subjects. Should we believe that students or managers could accurately and independently evaluate an ethical issue in a scenario after having performed the same operation over a dozen times? Research assessing the effect of the number of scenarios used would significantly aid researchers in selecting an appropriate number in their research designs.

Context of the scenarios. One of the most positive findings in the review was that all 26 studies placed the ethical situation in a business context. Only Weber (1990) used a combination of scenarios from a business context and a non-business context. Since Weber found significant differences in the stage of moral reasoning exhibited by the managers in his study across contexts, researchers may want to consider using a combination of contexts in their scenarios depending upon the research focus.

Marketing researchers (e.g., Dubinsky & Ingram, 1984; Dubinsky & Loken, 1989) have developed scenarios relevant to the marketing function of business. Otherwise, most scenarios have focused upon general business practices, understandable by managers in any function of business as well as by students. The impact of the specificity of the ethical issue contained in a scenario is unexplored. Future researchers might want to compare responses to scenarios dealing with general business practices with responses to scenarios containing ethical issues specific to marketing or other functional areas of business.

Relevancy, familiarity, and generalizability. Researchers should be aware of a concern for the relevancy of scenarios, especially when using student populations. Mathison (1988) questions the use of top management, policy-making cases in the classroom since the students' ability to understand the case and comprehend the level of decision making may be lacking. The same may be true of research scenarios. Weber's (1990) use of ethical dilemmas set in a business context avoids Mathison's trap since Weber uses a middle-level managerial population. Similarly, the pairs of scenarios developed by Fritzsche and Becker (1983, 1984) are relevant for their sample of managers.

However, the use of these organization-based ethical dilemmas in studies with student population samples must be questioned. For example, Arlow and Ulrich (1980) present realistic business dilemmas to students with no significant work experience. The students' exposure to ethical business situations is only through their current enrollment in a Business and Society course, according to Arlow and Ulrich. Similar student exposure to business scenarios can be found in Grant and Broom (1988) and Stead *et al.* (1987). Precautions should be taken to ensure that respondents, particularly students, understand the ethical issue embodied in the scenario.

Underlying this concern is the issue of familiarity. Freeman and Giebink (1979) found significant differences in their subjects' responses to a variety of non-business scenarios depending upon the subject's familiarity with the

issue presented. Researchers should question whether students truly understand organizational notions used in scenarios, for example contingency reinforcements (found in Stead *et al.*, 1987). Without a familiarity of business culture and practices, the responses to the dilemmas presented may be quite different than the responses given by subjects who understand the operations of business.

Related to the issues of relevancy and familiarity is the issue of generalizability. Scenario research is vulnerable to the criticism of presenting the subject with a task framed by unrealistic circumstances, making a generalization to actual decision making or behavior difficult. A detailed methodology for developing realistic scenarios is presented by Fredrickson (1986). By emphasizing realism in developing the context, problem, described actions, and terminology of the scenarios, Fredrickson argues that "the scenario generates interest, and therefore 'involvement' by the respondent" (1986:481). This involvement enables the researcher to more closely approximate real world conditions and elicit more realistic responses. Although Fredrickson's focus is toward strategy research, many of his suggestions are relevant for scenario-based, business ethics research.

How scenarios differ within a study. Overall, 78 percent of the studies (18 of 23, since 3 studies used only one scenario) presented respondents with scenarios that differed by ethical issue or business practice. The five exceptions to this general practice present some interesting research issues. Jones (1990) varied the role played by the respondent. The organizational influence exerted upon the subject was varied by Laczniak and Inderrieden (1987). Changing the gender of the character in the scenario was investigated by McNichols and Zimmerer (1985). As stated earlier, Weber (1990) changed the context of the scenario from business to non-business. Finally, Dubinsky and Loken (1989) altered the behavioral option available to the respondent across scenarios.

While the innovative approaches taken by these five studies is encouraging, it is troubling to find that the majority of the studies failed to develop a systematic method for categorizing and assessing the differences in the responses caused by changing the ethical issue or business practice across the scenarios. Since most of the studies varied the scenarios in this manner, researchers need to develop a schema that will assess any differences that might result.

Based upon a theoretical framework, researchers may want to consider using multiple scenarios to measure a variety of other testable factors: differences due to changing the order of the information presented in the scenario; differences due to changing the gender of the actor or victim in the scenario (similar to McNichols and Zimmerer's work); influences exerted by an organization's policies, incentives, and/or sanctions (patterned after Laczniak and Inderrieden's study); influences exerted by organizational characteristics, such as bureaucratic structure, organizational control, managerial style, etc.; the type of harm presented in the scenario and/or the degree of harm inflicted by the ethical or unethical action (as suggested by Collins, 1989). These are just a few of the possibilities available.

Response options. As indicated in the Appendix, 16 studies used a Likert-scale to elicit subjects' responses, three studies used a dichotomous (yes/no, agree/disagree) option, and three other studies provided subjects with a multiple choice selection. Thus, 85 percent (22 studies) provided the subject with limited, closed-ended response options. These forms of closed-ended responses possess some advantages and may be appropriate in some cases. Closed-ended responses allow the researcher to collect large amounts of data without making exceptional demands upon the subjects' time or requiring extensive effort from the subject. Most responses can be coded without any specialized skill or training, and can be easily recorded for statistical manipulation by the researcher.

However, researchers should be aware of the potential for bias imposed by determining the possible response options for the respondent. The use of closed-ended response options also limits the subjects' freedom in responding to the scenarios. Although a seven-point Likert-scale response provides more freedom for the respondent than a dichotomous option, closed-ended responses generally force subjects into a "black-or-white" decision or behavior. This unidimensional decision making is unlike the real world, as noted by Cavanagh and Fritzsche (1985). Researchers may need to incorporate the possibility of multidimensional decision making into their research designs and provide unrestricted response options to the subject. Typically, this would require the use of open-ended responses. Forcing the respondent to select a point on a Likert-scale, or a "yes" or "no" decision for action may be unrealistic.

Four studies (Fritzsche & Becker, 1984; Weber, 1990; Weber & Green, 1991; and Zinkham, Bisesi & Saxton, 1989) utilized the open-ended format in eliciting responses from their subjects. While promising, there is also difficulty in using open-ended questions. Open-ended responses can be difficult to code for data analysis and the researcher's subjectivity in the coding of an open-ended response may intrude. Weber (1990), Weber and Green (1991), and Zinkham, Bisesi and Saxton (1989) present details of how the authors attempted to avoid researcher bias in the coding of this type of data. The nature of the business ethics field and the richness of the data collected should also be considered. While closed-ended response options provide for greater ease in collecting, coding, and analyzing the data, the limitations inherent in the use of this type of data collection should be considered.

Validity and reliability checks. In a majority of the studies (17 of 26, 65%) no validity or reliability checks are presented, indicating a serious weakness of scenario-based research. However, interrater reliability checks of coding open-ended data were conducted by Weber (1990), Weber and Green (1991), and Zinkham, Bisesi and Saxton (1989). Dubinsky and Ingram (1984) and Dubinsky and Loken (1989) selected scales with a high Cronbach's alpha. The representativeness of the ethical issues contained in the scenarios was pretested by Barnett and Karson (1987), Clark (1966), Fritzsche and Becker (1983, 1984), and Harris (1990). Finally, a debriefing interview was used by Laczniak and Inderrieden (1987) as a reliability check for subject's understanding of the exercise.

The general lack of validity and reliability checks reflects the findings reported by Randall and Gibson (1990) in their review of selected business ethics research. They found that only 19 percent of the studies demonstrated a concern for validity measures, only 19 percent reported reliability checks, and only 20 percent of the studies reviewed reported pretesting their data collection instrument. The findings of Randall and Gibson and the present review clearly indicate a need for research efforts in this area to enhance the credibility of the results obtained in the studies.

Population and Sampling

Populations. Randall and Gibson (1990) found that 67 percent of business ethics studies since 1961 used managerial populations. In focusing upon studies using scenarios the findings are similar. As shown in the Appendix, 62 percent (16 studies) used managerial populations, 35 percent (9 studies) used student populations, and Stevens (1984) used both managers and students.

Scenario-based research avoids the criticism often levied against empirical research of using convenience samples of students due to their "captive audience" status in the researchers' classrooms (Rosenthal & Rosnow, 1975). In most studies where student populations were used, this type of subject population was appropriate. For example, Arlow and Ulrich (1980) are concerned about the future of ethics in business, thus their study addresses the assessment of ethical perceptions among business students. Similarly, Weber and Green (1991) seek to measure whether business students are capable of grasping ethical concepts by identifying their stage of moral reasoning level prior to the students' exposure to courses emphasizing these concepts, thus a student population was required.

However, some researchers appear to utilize student populations due to the availability of subjects, not the appropriateness of these individuals given the research focus. Betz, O'Connell and Shepard (1989) used business school students as subjects to support gender theory differences and gender socialization. Although they recognize the greater value in testing the subjects after they have been in the labor force for a period of time, the project would have been enhanced had the authors used a managerial population. The question of an appropriate selection of subjects may also be raised regarding the Stead *et al.* (1987) study. The researchers used undergraduate business students to assess the influences of managerial philosophy and contingencies of reinforcement (two social learning variables) upon unethical decision behavior. The discussion of the study's results generalizes to show support for the theories tested, although the authors recognize the limitation of using students as subjects. The selection of student populations, without any organization experience, should be done with caution, if at all, to assess the effect of organizational forces upon ethical decision making.

The appropriate use of managerial populations when investigating organizational factors in scenario-based research was also evident. A managerial

population was selected by Barnett and Karson (1987) to understand the relationship between personal ethical values, gender, and ethical business decisions. The authors used their findings to build a theory about the value-decision relationship and to explore the impact of managers' career stages, organization level, and business function upon ethical business decisions. Laczniak and Inderrieden (1987) used managers to consider whether the presence of particular corporate policies or statements influenced the exhibition of desired ethical behavior. Finally, Harris (1990) examined the ethical values of managers at different levels within the organization hierarchy in a single firm. In each of these studies the emphasis upon organization factors and corporate actions necessitated the use of managerial population sampling, whereas the use of student sampling would have severely limited the generalizability of the results.

The use of managerial populations may allow the researcher to generalize to a greater degree to the world of the business decision maker. Yet, researchers should proceed with caution in concluding too strongly from their findings. Scenarios are only *facsimiles* of real situations and the subjects' responses to the scenarios demonstrate *intended* reasoning, decisions, or behavior. Limitations regarding the validity, generalizability, and statistical inferences drawn from the findings should be recognized and reported by the researchers. Scenario-based research, while possessing many advantages, is not the same as empirical field research. Research using scenarios is limited in its ability to discover and reflect actual business decision making or actions.

Sampling. The selection of subjects usually entails the use of random or convenience sampling. Of the 26 studies reviewed, random sampling was used in 44 percent of the studies with managerial populations (7 studies). In each of these studies an extensive list of potential managerial subjects was acquired and a systematic sampling from this list was conducted. Nine managerial population studies and all ten of the studies utilizing student populations used convenience sampling. Again, these findings are generally consistent with Randall and Gibson's (1990) findings of 42 percent of the studies using convenience sampling, and 33 percent reported using random sampling (with the remaining studies having an undetermined type of sampling). Lazerwitz (1968) and others suggest the use of random sampling as the best assurance against sampling bias, thus only a small percentage of the studies may be free from this limitation. However, some of the studies in the review using random sampling techniques also had low response rates. For example, 6,000 questionnaires were mailed to a stratified random sample of American Management Association members in a study conducted by Posner and Schmidt (1987), with only a 25 percent response rate. Fritzsche and Becker (1983) selected their subjects by drawing a systematic random sample of 593 marketing practitioners from the 1979 American Marketing Association roster and achieved a 21 percent response rate.

Higher response rates were reported by two other studies while using a random sample. Stores were randomly selected using a regional yellow

pages by Norris and Gifford (1988). They mailed surveys to store managers in the Cincinnati and Dayton, Ohio areas and reported a 45 percent response rate. Harris (1990) utilized a proportionate random sampling process to select middle-level and supervisory managers, as well as sales and customer service persons, from a single firm and reported a 76 percent response rate. Thus, it appears that the ability to generate an adequate response rate may be more a function of the geographic distribution of the mailing than the random sampling procedure.

Alternatively, the use of a convenience sample of managers or students is often appealing to researchers and may be the only realistic source of subjects. Researchers should be extremely cautious about the generalizability of the research findings due to the possibility of sampling bias.

Sample size. The reported sample sizes of the 26 studies ranged from 101 to 250 in 48 percent of the studies (13 studies). Five studies had sample sizes exceeding 1,001 subjects. The appropriate size for a sample is highly dependent upon the research design: the number of variables incorporated into the scenarios, the number of scenarios used, etc. According to Randall and Gibson, "many researchers view 100 subjects as a common sample size" (1990:464).

Cohen (1990) discusses a common sense approach to the axioms "less is more" and "simple is better." Although he advocates the value of large sample sizes, he also cautions against going too far. "I have so heavily emphasized the desirability of working with few variables and large sample sizes that some of my students have spread the rumor that my idea of the perfect study is one with 10,000 cases and no variables. They go too far," explains Cohen (1990:1305). Numerous examples of how the power of the study is improved by less or more subjects are presented by Cohen. He concludes by advising researchers to consider the size of the population effect studied, the level of acceptable alpha risk, and the desired power of the statistic to determine the adequate sample size for each project.

It appears that most of the 26 scenario-based studies have acquired a sufficient sized sample. Future research, especially if researchers switch to open-ended responses as suggested earlier, may find the minimum of 100 subjects to be more challenging than in previous studies.

Response rate. Babbie (1989) states that a response rate of at least 50 percent for this type of survey research would be adequate, with a 70 percent or greater response rate preferred. However, the response rate for studies using scenarios with managerial populations was relatively low. As shown in the Appendix, 12 of the 13 managerial population studies had a response rate of between 21 and 50 percent. Only Harris (1990) reported a managerial response rate greater than 70 percent. In the study conducted by Harris, the relatively high response rate of 76 percent may have been due to limiting the population surveyed to employees from a single firm. In addition, Harris provided a personalized cover letter and a stamped return envelope when distributing the survey, as well as mailing a reminder postcard to increase his response rate.

Lower response rates appear to be relatively common in business ethics research. Randall and Gibson (1990) found the 21 to 50 percent response rate range to be the most common, with 43 percent the mean response rate for business ethics research. These frequent low response rates may be due to the sensitive nature of business ethics issues. Randall and Gibson provide a number of constructive suggestions to improve the response rate for business ethics research. They suggest personal interviewing, focusing upon a specific subpopulation, persuading subjects of the importance of the research, or providing free gifts for participation.

If mailed surveys are used, it is generally acknowledged that the classic handbook in the social sciences that outlines techniques to achieve higher response rates is by Dillman (1978). He provides a number of suggestions which would improve the response rate to scenario-based questionnaires distributed through the mail. Dillman recommends that the research explain the focus of the study in a cover letter, emphasize the importance of the respondent to the study, stress the confidentiality of the response (especially critical in ethics research), and construct a coordinated initial mailing and follow-up mailing procedures (see Dillman:160-199).

While Dillman's suggestions apply to all mailed survey research, the acute sensitivity of ethics research requires a greater attention to detail in the design and distribution of scenarios containing ethical dilemmas. Despite efforts made to improve the response rate, if future researchers find their response rate to be relatively low, they should be cautious in the generalizability of their findings since their results may not be truly representative of a managerial or student population.

Student surveys using scenarios tend to report substantially higher response rates, but these rates are significantly influenced by the environment in which the data are collected: an in-class exercise where all students are expected to participate. Students may be rewarded for their participation or peer pressure may make it difficult for students to choose not to participate. Thus, it is not surprising that all four of the studies using student populations that reported rates cite a 96 percent or higher response.

Observation

Data collection timeframe. In general, researchers contacted subjects only once in order to collect the scenario-based data (92%, 24 of 26 studies). While this may be appropriate in some studies, the use of repeated data collection procedures may broaden our understanding of ethical reasoning, decision making, and intended behavior. Alternative methods have been developed and reported in the literature. Arlow and Ulrich (1980) collected students' responses to scenarios prior to, and immediately following, a course in business ethics. Norris and Gifford (1988) conducted a "repeated measure procedure" to elicit intended ethical behavior. The authors periodically measured the ethical responses of undergraduate marketing and retailing majors at a major midwestern university over time—1976, 1978, 1979,

1982, 1984, and 1986. Norris and Gifford used this procedure to determine if there was any significant change in those individuals likely to be employed in the retail field over a ten-year period.

Each of these alternatives to the one-time data collection procedure, common in scenario-based research, has its own advantages and research projects should be designed to include this form of data collection if possible. For example, tracking student populations during their undergraduate studies and into their professional life (patterned after Arlow and Ulrich) may afford researchers an opportunity to assess the influence of age, education, work environment, peer group pressure, and many other factors. Assessing managers before and after significant changes in the workplace (e.g., merger or acquisition, economic changes, product liability suits, ecological disasters, etc.) may enhance the value of the research more than the more common single data collection of information.

Data collection method. The use of the written survey is the most prevalent method of data collection. Twenty-four studies (92%) utilized this method. The written survey is often preferred over telephone and in-person interviews due to its ease of administration and relatively low cost for both data collection and data analysis. However, there is a possibility that critical data may be ignored, missed, or tainted when using the written survey method, since it does not allow for researcher-subject interaction to clarify questions or responses.

As an alternative to the written survey, Weber (1990) conducted in-person interviews with managers to assess their moral reasoning. An in-basket exercise with a debriefing interview was used by Laczniak and Inderrieden (1987) to determine organizational influences upon the subjects' ethical decision-making process. The in-basket method has also been successfully used in business ethics research by Trevino and Youngblood (1990). These innovative data collection methods may enhance future research using scenarios. However, Weber (1991) reported that no significant differences were found in managerial moral reasoning when collecting the data through the in-person interview or a written interview (survey). Further validation of Weber's findings is required. If an interview procedure is appropriate, Fortado (1990) provides an excellent list of guidelines for the researcher conducting a semistructured interview.

Social desirability bias. Given the sensitive nature of business ethics research, a critical issue is the social desirability bias that may be contained in subjects' responses. It is disappointing to find in the review of the 26 studies that only Stevens (1984) recognizes and accounts for the possibility of social desirability bias in his scenario study. Stevens uses the Crowne-Marlowe Social Desirability Scale, recommended by Nederhof (1985) but criticized by Randall and Fernandes (1991). Nederhof suggests a number of other possible methods to reduce the social desirability bias in values and ethics research.

An empirical assessment of the influence of social desirability was conducted by Armacost, Hosseini, Morris and Rehbein (1990). These authors

tested a number of response techniques and found scenarios to be less susceptible to a social desirability bias than other possible techniques, such as the use of direction questions in a survey. However, the issue of social desirability still pervades business ethics research and future researchers using scenarios should attempt to control for this factor in their data collection and report the potential for social desirability bias in their findings. [See Randall and Fernandes (1991) and the Fernandes and Randall article in this issue for a thorough discussion of the issue of social desirability bias in business ethics research.]

Data Processing and Analysis—Statistical Measures

Randall and Gibson (1990) report that business ethics research predominantly uses univariate or bivariate statistical analysis. Scenario-based research is consistent with this pattern. As shown in the Appendix, the most common statistical method of data reporting was the use of frequencies (17 studies). Six studies used only frequencies to report the data. Student's t-tests of significance were used in 9 studies. Chi-square tests of associations were used by Posner and Schmidt (1987), Weber (1990), and Weber and Green (1991). Correlation coefficients were reported by Dubinsky and Ingram (1984), Fritzsche and Becker (1984), McNichols and Zimmerer (1985), and Zinkham, Bisesi and Saxton (1989).

Some multivariate analysis was also reported. ANOVA was utilized in five studies (Akaah, 1989; Bellizzi & Hite, 1989; Fritzsche & Becker, 1983; Harris, 1990; and, Laczniak & Inderrieden, 1987). Factor analysis (Harris, 1989), discriminant analysis (Stead, Worrell, Spalding & Stead, 1987), path analysis (Dubinsky & Loken, 1989), loglinear logit analysis (Barnett & Karson, 1987), and linear modelling (Zinkham, Bisesi, Saxton, 1989) were also reported.

The appropriate statistical analysis is often dictated by the research design. One of the most unique and extensively explained statistical techniques for a study using scenarios was presented by Barnett and Karson (1987). These researchers utilized loglinear logit analysis to study their data since each response indicated one and only one of two possible mutually exclusive behavior options. [See the authors' detailed explanation of the procedure in Appendix B of their article, pages 768-771.] More common statistical procedures were used by Fritzsche and Becker (1983). To assess the respondent's consistency across the three responses to the scenarios (the individual, the individual's peers, and the individual's top management), a repeated measures analysis of variance (ANOVA) was used. To perform a different statistical analysis, Fritzsche and Becker used a paired t-test statistic to calculate the contrast between the paired scenarios emphasizing the same ethical issue. Another statistical technique with high probability for application in scenario-based research was used by Weber (1990). After collapsing his data into a 2 x 2 design, Weber used a chi-square analysis procedure to determine if there was a significant relationship between two variables.

The appropriate use of loglinear logit analysis, analysis of variance, paired t-tests, or chi-square analysis depends upon the research design and data collected. Although sophisticated statistical analysis should not be used inappropriately or unnecessarily, there are instances in previous scenario research where additional data analysis could have been used to increase the power of the research findings.

Betz *et al.* (1989) report their data in frequency tables, indicating the percentage of female and male responses to their four scenarios. The authors could have taken the data analysis a step further by making statistical comparisons of the gender differences. Given the form of the data (percentages), a proportionate difference test could be performed to determine if any of the differences between the females' and males' responses in their sample are statistically different. Similarly, Grant and Broom (1988) report the percentage levels of their subjects' responses. The authors could have compared the responses to other variables discussed in their study (family income, father's occupation, or the subjects' type of university) through the use of a chi-square analysis or correlation comparison. Finally, Longenecker, McKinney and Moore (1989) report the average rating responses for 16 scenarios and note numerous statistical differences within their data, although the authors do not identify the statistical method or significance level used (probably a t-test and .05, respectively). A variety of additional statistical tests would have been appropriate and may have increased the power of the findings from the data collected. For example, the relationships between the degree of ethical pressure perceived by the respondent and the likelihood of ethical responses given could have been analyzed through a chi-square or correlation analysis.

Researchers should be cautioned against using sophisticated statistical analysis for its own sake, avoiding a "statistic technique" race in competition with other researchers. However, the strong reliance upon univariate and bivariate analysis, especially reporting only statistical frequencies, may indicate a need to develop more elaborate research designs. An encouraging discovery was reported by Randall and Gibson (1990) who found a positive relationship between the passage of time and the use of multivariate statistics.

A similar discovery was made in investigating scenario-based research. In research published prior to 1986, bivariate analysis of the data appeared three times and multivariate analysis only once, compared to nine instances of univariate analysis. Since 1986, multivariate analysis of data appeared 10 times and bivariate analysis four times, or 48 percent of the statistical analyses, compared to 15 instances of univariate analysis. It appears that more researchers are using more complex statistical analysis as the business ethics field develops and matures.

Conclusions

This review of the use of scenarios in the business ethics literature is less optimistic than the previous review by Cavanagh and Fritzsche (1985). A

general lack of rigor seems to characterize the research due to a lack of consistent theoretical foundation or development of testable hypotheses in research. Numerous methodological issues inherent in scenario-based research are unexplored, resulting in vulnerability to serious reliability and validity challenges. Selection of subjects seems to be a matter of convenience, rather than representativeness of the general population of managers or students. Finally, a general lack of sophistication of statistical analysis characterizes the scenario-based research field. While such limitations are generally symptomatic of a new, emerging field, they should be addressed and resolved. In an effort to continue to improve research in the business ethics field and to enhance the use of scenarios in discovering answers to our questions regarding ethical reasoning and intended behavior, the following recommendations are offered, generally paralleling the major components of the research process shown in Figure 1.

Recommendations

1. *Establish a strong theoretical foundation.* Much of the research conducted thus far has suffered from the absence of a strong theoretical foundation, adopting a "let's see what we find" approach. Critical exceptions to this finding provide exemplary models for future research. For example, empirical research based upon constructs in gender theory (Barnett & Karson, 1987), organization theory (Laczniak & Inderrieden, 1987), ethics theory (Fritzsche & Becker, 1984), or moral development theory (Weber, 1990) establish a strong theoretical foundation for scenario-based research. Theoretical foundations for scenario-based research exist in the business ethics literature (e.g., Bommer *et al.*, 1987, Brady, 1985, Jones, 1991, Trevino, 1986) and social science literature (e.g., Fishbein and Azjen's theory used by Dubinsky & Loken, 1989). Therefore, future empirical research should be based upon testing these business ethics or social science theories and models.

2. *Establish testable, a priori hypotheses.* Coinciding with the critical need for a strong theoretical foundation for empirical research is the equally important need to establish testable *a priori* hypotheses. As shown in prior research by Barnett and Karson (1987) and Dubinsky and Ingram (1984), testable hypotheses are possible and enhance the quality of scenario-based research. By emulating research using hypotheses, researchers may develop a clearer focus in their studies and will be able to conduct cross-study comparisons with previous findings. Hypothesis testing will also serve to validate or invalidate business ethics or social science theories and models.

3. *Avoid the "reinventing the wheel" syndrome.* Although scenario-based research in the business ethics field began in 1961 with Baumhart's study of managers' values and ethics, much of the work has been published since 1985. While this indicates that the field is relatively young, researchers should begin to build upon and extend previous work, as shown by Arlow and Ulrich's (1980) and Stevens' (1984) use of Clark's (1966) set of scenar-

ios. Various sets of scenarios have been developed with promising relevancy, focus, and flexibility (see Dubinsky & Ingram, 1984; Fritzsche & Becker, 1983, 1984; Weber, 1990). These scenarios should be utilized by future researchers if possible. The use of the same scenarios may result in the validation of a set of scenarios and allow for cross-study comparisons. In addition, replication studies may also validate or serve to question earlier research findings.

4. *Develop valid and reliable new scenarios, as research needs require.* If it is necessary to develop new scenarios for future research, care should be exercised to develop scenarios that are validated and reliable. Scenarios should embody the ethical issues intended, measure the constructs proposed in the research question, and be subject to validity and reliability tests. Depending upon the research design, researchers should avoid using only one or two scenarios, yet also avoid the other extreme of using a dozen or more scenarios. In addition, new scenarios should be developed that contain realistic business dilemmas. The scenarios should contain ethical issues or describe business practices that are familiar to the subjects. Critical variables should be controlled for or manipulated across the scenarios, as dictated by the research design.

5. *Focus upon critical research questions.* Most prior research using scenarios has focused upon a descriptive account of the individual's decision-making process, ethical judgment, and/or intended ethical behavior. Guided by theory, research should delve more deeply into these areas and seek to incorporate each into the overall decision-making process. For example, what are the implications of organizational structure, organizational influences through rewards or incentives, or the particular treatment effects upon subjects' responses to various scenarios? How does an individual's reasoning process influence the decision or intended action? Alternatively, researchers may want to explore the differences in responses to hypothetical *versus* realistic scenarios, the influence of the type of harm evident in scenarios, or the degree of harm caused by the ethical or unethical actions.

In addition, researchers should test some of the methodological assumptions common to this approach. Possible research questions include assessing the influence of the information order effects within scenarios, the influence of the gender of the characters in scenarios, and the subject's familiarity with the issues contained in the scenarios.

6. *Carefully select response options.* Researchers may want to consider utilizing open-ended responses (for example, those used by Fritzsche & Becker, 1984; Weber, 1990; Weber & Green, 1991; or Zinkham, Bisesi & Saxton, 1989) which allow subjects to discuss and explain their thoughts in resolving an ethically-oriented scenario. Exploring the use of in-person interviews (Weber, 1990) or in-basket exercises with debriefing interviews (Laczniak & Inderrieden, 1987), rather than the typical written survey approach, may enhance the reliability and validity of scenario-based research. Future research may want to allow subjects to respond to both closed-ended and open-ended questions. If Likert-scale, dichoto-

mous, or multiple choice response options are used, researchers should carefully consider potential limitations of closed-ended response options discussed earlier in the paper.

7. Use of appropriate population sampling. Researchers should be sensitive to the appropriate use of managerial or student population samples, as well as the preference for random sampling techniques over the use of convenience sampling. Some scenario-based research has appropriately used student populations. For example, Arlow and Ulrich (1980) and Weber and Green (1991) used students in the assessment of the impact of business ethics education.

Alternatively, the use of managerial populations by Barnett and Karson (1987), Laczniak and Inderrieden (1987), and Harris (1990) to examine organizational forces impacting upon the subjects' ethical values, decisions, or intended behavior was highly appropriate. Care should be taken to match the population selected (students or managers) with the context of the variables measured (ethics education or organizational forces).

In addition to the question of whether to select managers or students as subjects is the issue of how the subjects are selected. Random sampling is the preferred method in most situations (Lazerwitz, 1968), yet some scenario-based research which utilized this method suffered from low response rates. Norris and Gifford (1988) and Harris (1990) provide examples of random sampling from a geographically limited or single firm source of subjects where response rates were at an acceptable level. Future researchers should cautiously use a random sampling of a national or international organization since the potential for non-response bias may counter the benefits from random sampling.

If convenience sampling of managers or students is used out of necessity or availability, researchers must recognize the potential for sampling bias within their population pool and consider this limitation in their discussion of the generalizability of the research results.

8. *Include procedures to improve the response rate.* Response rates for scenario-based research have been typically below recommended levels. Efforts should be made to increase response rates to over 70 percent to enhance the generalizability of the results. Suggestions offered by Randall and Gibson (1990) and Dillman (1978) are outlined earlier in the paper. Actions taken by Harris (1990) have also been presented. The absence of these techniques appears to have a significant impact upon the response rates of research using scenarios. The low response rates reported by Fritzsche and Becker (1983, 1984), Longenecker, McKinney and Moore (1989), and Posner and Schmidt (1987) may have been improved if these researchers had included actions suggested by Dillman or others. Future researchers should heed the warnings and carefully incorporate suggestions from Randall and Gibson or Dillman into their research projects.

9. *Control and account for social desirability bias.* The nature of business ethics research includes a high probability of social desirability bias. Researchers using scenarios may be less vulnerable to this bias than research-

ers using direct question surveys (Armacost *et al.*, 1990), but should still acknowledge this bias in reporting research results. Since virtually all scenario-based research has ignored this bias, researchers should familiarize themselves with the numerous methods for controlling and accounting for social desirability bias presented in the literature (see Nederhof, 1985 or Randall and Fernandes, 1991).

10. *Use multivariate statistical analysis.* As the complexity of the research design and content of scenarios develops, researchers should incorporate multivariate statistical analysis into the data analysis procedures. Examples of sophisticated and appropriate use of statistical techniques were used by Barnett and Karson (1987), Fritzsche and Becker (1983), and Weber (1990) to increase the power of their research findings. In most cases, the mere reporting of the frequencies of the subjects' responses is insufficient and fails to adequately tap the explanatory potential of the data.

Although the selection of the particular statistical technique is determined by the research design and form of the data collected, researchers using scenarios should seek the appropriate bivariate or multivariate analysis to explain their research results. Thus, it is suggested that improvements upon the relatively simplistic univariate and bivariate statistical analysis should be included in the research design and analysis of the results as the field of business ethics research develops and matures.

Summary

It is clearly a difficult task to develop a universal list of recommendations for using scenarios to assess ethical reasoning, decision making and/or intended behavior. However, since scenarios are commonly used to collect empirical data on business ethics issues and, most likely, will continue to be used in the future, methodological improvement is highly desirable. The recommendations presented here may serve as a guide for researchers to consider and to determine how to strengthen the research design of a scenario-based study of business ethics.[1]

Notes

[1]The author would like to express his appreciation to David Fritzsche, Sharon Green, Donna Randall, and two anonymous reviewers for their helpful suggestions on earlier drafts of this manuscript.

References

Akaah, I. P. (1989) "Differences in research ethics judgments between male and female marketing professionals," *Journal of Business Ethics* 8: 375-381.

Alexander, C. S. & H. J. Becker (1978) "The use of vignettes in survey research," *Public Opinion Quarterly* 42(1): 93-104.

Arlow, P. & T. A. Ulrich (1980) "Business ethics, social responsibility and business students: An empirical comparison of Clark's study," *Akron Business and Economic Review* Fall: 17-22.

Armacost, R. L., J. C. Hosseini, S. A. Morris, & K. A. Rehbein (1990) "Alternative questioning methods for addressing social desirability effects in SIM research," paper presented at the annual National Academy of Management meeting, San Francisco, CA.

Babbie, E. (1989) *The practice of social research*, 5th Edition. Belmont, CA: Wadsworth Publishing Company.

Barnett, J. H. & M. J. Karson (1987) "Managers, values and executive decisions: An exploration of the role of gender, career stage, organizational level, function, and the importance of ethics, relationships and results in managerial decision-making," *Journal of Business Ethics* 8: 747-771.

Baumhart, S. J., R. C. (1961) "How ethical are businessmen?" *Harvard Business Review* July-August: 6-ff.

Bellizzi, J. A. & R. E. Hite (1989) "Supervising unethical salesforce behavior," *Journal of Marketing* 53 (April): 36-47.

Betz, M., L. O'Connell & J. M. Shepard (1989) "Gender differences in proclivity for unethical behavior," *Journal of Business Ethics* 8: 321-324.

Bommer, M., C. Gratto, J. Gravander & M. Tuttle (1987) "A behavioral model of ethical and unethical decision making," *Journal of Business Ethics* 6: 265-280.

Brady, F. N. (1988) "A Janus-headed model of ethical theory: Looking two ways at business/society issues," *Academy of Management Review* 10(3): 568-576.

Brenner, S. N. & E. A. Molander (1977) "Is the ethics of business changing?" *Harvard Business Review* January-February: 57-71.

Burstin, K., E. B. Doughtie & A. Raphaeli (1980) "Contrastive vignette technique: An indirect methodology designed to address reactive social attitude measurement," *Journal of Applied Social Psychology* 10 (March-April): 147-165.

Cavanagh, S. J., G. F. & D. J. Fritzsche (1985) "Using vignettes in business ethics research," in L. Preston (Ed.) *Research in corporate social performance and policy* (Greenwich, CT: JAI Press) 7: 279-293.

Clark, S. J., J. W. (1966) *Religion and moral standards of American business.* Cincinnati: South-Western Publishing.

Cohen, J. (1990) "Things I have learned (so far)," *American Psychologist* 45(12): 1304-1312.

Collins, D. (1989) "Organizational harm, legal condemnation and stakeholder retaliation: A typology, research agenda and application," *Journal of Business Ethics* 8: 1-13.

Dillman, D. (1978) *Mail and telephone surveys: The total design method.* New York: John Wiley and Sons.

Dubinsky, A. J. & T. N. Ingram (1984) "Correlates of salespeople's ethical conflict: An exploratory investigation, *Journal of Business Ethics* 3: 343-353.

Dubinsky, A. J. & B. Loken (1989) "Analyzing ethical decision making in marketing," *Journal of Business Research* 19: 83-107.

Fortado, B. (1990) "The responsibilities of a semistructured interviewer," *Employee Responsibilities and Rights Journal* 3(1): 31-46.

Fredrickson, J. W. (1986) "An exploratory approach to measuring perceptions of strategic decision process constructs," *Strategic Management Journal* 7: 473-483.

Freeman, S. M. J. & J. W. Giebink (1979) "Moral judgment as a function of age, sex, and stimulus," *The Journal of Psychology* 102: 43-47.

Fritzsche, D. J. & H. Becker (1983) "Ethical behavior of marketing managers," *Journal of Business Ethics* 2: 291-299.

Fritzsche, D. J. & H. Becker (1984) "Linking management behavior to ethical philosophy—An empirical investigation," *Academy of Management Journal* 27: 166-175.

Grant, Jr., E. W. & L. S. Broom (1988) "Attitudes toward ethics: A view of the college student," *Journal of Business Ethics* 7: 617-619.

Harris, J. R. (1989) "Ethical values and decision processes of male and female business students," *Journal of Education for Business* 64(5): 234-238.

Harris, J. R. (1990) "Ethical values of individuals at different levels in the organizational hierarchy of a single firm," *Journal of Business Ethics* 9: 741-750.

Jones, C. & E. Aronson (1973) "Attribution of fault to a rape victim as a function of respectability of the victim," *Journal of Personality and Social Psychology* 26: 417-419.

Jones, T. M. (1991) "Ethical decision making by individuals in organizations: An issue-contingent model," *Academy of Management Review* 16: 366-395.

Jones, Jr., W. A. (1990) "Student views of 'ethical' issues: A situational analysis," *Journal of Business Ethics* 9: 201-205.

Laczniak, G. R. & E. J. Inderrieden (1987) "The influence of stated organizational concern upon ethical decision making," *Journal of Business Ethics* 6: 297-307.

Landy, D. & E. Aronson (1969) "The influence of the character of the criminal and his victim on the decision of simulated jurors," *Journal of Experimental Social Psychology* 5: 141-152.

Lazerwitz, B. (1968) "Sampling theory and practice," in H. A. Blalock & A. B. Blalock (Eds.) *Methodology in social research.* New York: McGraw-Hill: 278-328.

Longenecker, J. G., J. A. McKinney & C. W. Moore (1989) "The generation gap in business ethics," *Business Horizons* 32(5): 9-14.

Mathison, D. L. (1988) "Business ethics cases and decision models: A call for relevancy in the classroom," *Journal of Business Ethics* 7: 777-782.

McNichols, C. W. & T. W. Zimmerer (1985) "Situational ethics: An empirical study of differentiators of student attitudes," *Journal of Business Ethics* 4: 175-180.

Nederhof, A. J. (1985) "Methods of coping with social desirability bias: A review," *European Journal of Social Psychology* 15: 263-280.

Norris, D. G. & J. B. Gifford (1988) "Retail store managers' and students' perceptions of ethical retail practices: A comparative and longitudinal analysis (1976-1986)," *Journal of Business Ethics* 7: 515-524.

Nosanchuk, T. A. (1972) "The vignette as an experimental approach to the study of social status: An exploratory study," *Social Science Research* 1 107-120.

Payne, S. L. & R. A. Giacalone (1990) "Social psychological approaches to the perception of ethical dilemmas," *Human Relations* 43(7): 649-663.

Posner, B. Z. & W. H. Schmidt (1987) "Ethics in American companies: A managerial perspective," *Journal of Business Ethics* 6: 383-391.

Randall, D. M. & M. Fernandes (1991) "The social desirability response bias in ethics research," *Journal of Business Ethics*: 805-817.

Randall, D. M. & A. M. Gibson (1990) "Methodology in business ethics research: A review and critical assessment," *Journal of Business Ethics* 9: 457-471.

Rosenthal, R. & R. L. Rosnow (1975) *The volunteer subject.* New York: Wiley.

Shaw, J. & J. A. McMartin (1975) "Perpetrator or victim?: Effects of who suffers in an automobile accident of judgment strictness," *Social Behavior and Personality* 3(1): 5-12.

Star, S. A. (1955) "The public's ideas about mental illness," paper presented at the National Association for Mental Health meeting, Indianapolis.

Stead, W. E., D. L. Worrell, J. B. Spalding & J. G. Stead (1987) "Unethical decisions: Socially learned behaviors," *Journal of Social Behavior and Personality* 2(1): 105-115.

Stevens, G. E. (1984) "Business ethics and social responsibility: The responses of present and future managers," *Akron Business and Economic Review* 15(3): 6-11.

Trevino, L. K. (1986) "Ethical decision making in organizations: A person-situation interactionist model," *Academy of Management Review* 11(3): 601-617.

Trevino, L. K. & S. A. Youngblood (1990) "Bad apples in bad barrels: A causal analysis of ethical decision-making behavior," *Journal of Applied Psychology* 75(4): 378-385.

Weber, J. (1990) "Managers' moral reasoning: Assessing their responses to three moral dilemmas," *Human Relations* 43(7): 687-702.

Weber, J. (1991) "Adapting Kohlberg to enhance the assessment of managers' moral reasoning," *Business Ethics Quarterly* 1(3): 293-318.

Weber, J. & S. Green (1991) "Principled moral reasoning: Is it a viable approach to promote ethical integrity?" *Journal of Business Ethics* 10: 325-333.

Zinkham, G. M., M. Bisesi & M. J. Saxton (1989) "MBAs' changing attitudes toward marketing dilemmas: 1981-1987," *Journal of Business Ethics* 8: 963-974.

APPENDIX
Some Characteristics of the 26 Scenario-Based Studies

Author(s) (Year,Journal)	THEORY	HYPOS	NUMBER	USED	RESPONSE OPTIONS	POPULATION	SAMPLE SIZE	RESPONSE RATE	STATISTICS USED
Akaah (1989,JBE)	No	No	11		Likert-scale	Manager	420	31%	Frequency / ANOVA
Arlow & Ulrich (1980, Akron)	No	No	18		Likert-scale	Student	120	NoRpt	Frequency / t-test
Barnett & Karson (1987,JBE)	Yes	Yes	10		Dichotomous	Manager	513	47%	Frequency / Log Logit
Baumhart (1961,HBR)	No	No	4		Mult Choice	Manager	1531	31%	Frequency
Bellizzi & Hite (1989,JMktg)	Yes	Yes	4		Likert-scale	Manager	452	31%	ANOVA
Betz, et al (1989,JBE)	No	No	4		Dichotomous	Student	213	NoRpt	Frequency
Brenner & Molander (1977,HBR)	No	No	4		Mult Choice	Manager	1227	25%	Frequency
Clark (1966,Book)	Yes	No	17		Likert-scale	Manager	103	NoRpt	Frequency
Dubinsky & Ingram (1984,JBE)	Yes	Yes	10		Likert-scale	Manager	116	NoRpt	t-test / Correlation
Dubinsky & Loken (1989,JBR)	Yes	No	3		Likert-scale	Manager	305	44%	Regression / Path Analysis
Fritzsche & Becker (1983,JBE)	No	No	10		Likert-scale	Manager	124	21%	t-test / ANOVA
Fritzsche & Becker (1984,AMJ)	Yes	No	10		Open-ended	Manager	124	21%	Frequency / Correlation
Grant & Broom (1988,JBE)	No	No	1		Mult Choice	Student	118	100%	Frequency
Harris (1989,JEB)	No	Yes	15		Likert-scale	Student	161	NoRpt	Factor Analysis
Harris (1990,JBE)	No	No	15		Likert-scale	Manager	112	76%	Frequency / t-test / ANOVA
Jones (1990,JPSP)	No	No	10		Likert-scale	Student	134	NoRpt	t-test
Laczniak & Inderrieden (87,JBE)	Yes	No	9		Likert-scale	Manager	113	NoRpt	Frequency / t-test / ANOVA
Longenecker, etal (1989,BHor)	No	No	16		Likert-scale	Manager	2156	22%	Frequency
McNichols & Zimmerer (1985,JBE)	No	No	10		Likert-scale	Student	1130	96%	t-test / Correlation
Norris & Gifford (1988,JBE)	No	No	14		Likert-scale	Manager	102	40%	Frequency / t-test
Posner & Schmidt (1987,JBE)	Yes	No	2		Likert-scale	Manager	1498	25%	Frequency / Chi-square
Stead, etal (1987,JSBP)	Yes	No	1		Dichotomous	Student	338	100%	Discriminant Analysis
Stevens (1984,Akron)	No	No	17		Likert-scale	Both	113/349	25%/NR	Frequency / t-test
Weber (1990,HRltns)	Yes	No	3		Open-ended	Manager	37	50%	Frequency / Chi-square
Weber & Green (1991,JBE)	Yes	Yes	1		Open-ended	Student	61	100%	Frequency / Chi-square
Zinkham, etal (1989,JBE)	Yes	No	14		Open-ended	Student	561	NoRpt	Correlation / Linear Model

Journals = JBE (Journal of Business Ethics), Akron (Akron Business and Economic Review), HBR (Harvard Business Review), JMktg (Journal of Marketing), JBR (Journal of Business Research), AMJ (Academy of Management Journal), JEB (Journal of Education for Business), JPSP (Journal of Personality and Social Psychology), BHor (Business Horizons), JSBP (Journal of Social Behavior and Personality), HRltns (Human Relations).