EXAMINATION OF THE EFFECTS OF EXPERIENCE AND MISSING INFORMATION ON TAX PREPARER JUDGMENT

DISSERTATION

Presented to the Graduate Council of the

University of North Texas in Partial

Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Judy D. Lewis, B.B.A., M.B.A.

Denton, Texas

August, 1996

EXAMINATION OF THE EFFECTS OF EXPERIENCE AND MISSING INFORMATION ON TAX PREPARER JUDGMENT

DISSERTATION

Presented to the Graduate Council of the

University of North Texas in Partial

Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Judy D. Lewis, B.B.A., M.B.A.

Denton, Texas

August, 1996

Lewis, Judy D., Examination of the effects of experience and missing information on tax preparer judgment. Doctor of Philosophy (Accounting), August, 1996, 90 pp., seven tables, one figure, references, 33 titles.

This research examines how experience and missing information affect judgments of tax return preparers. Tax return preparers may often be faced with the problem of incomplete information, and their responses to this problem may be conditioned by whether or not they recognize information is missing. Based on the Holland et al.'s cognitive theory of induction as applied to tax judgment by Marchant et al., it was hypothesized that experienced tax preparers would correctly classify more items as to their relevance to a specific tax issue than novice tax preparers. Additionally, it was hypothesized that the strength of recommendations of tax preparers who had no relevant information missing would be greater than the strength of recommendations of tax preparers who had relevant information missing and were prompted that information was missing. Lastly, it was hypothesized that prompting that relevant information was missing would have a greater effect on the strength of recommendations of tax return preparers with lesser specific experience than it would on the strength of recommendations of tax return preparers with greater specific experience. The results suggest that experienced tax preparers do recognize the relevance of information to a greater degree than novice tax preparers. There was no significant difference, however, in the strengths of recommendation of tax preparers who had no missing information and those who were prompted that information was

missing. There was a significant difference in the strengths of recommendations of tax preparers with lesser specific experience who had been prompted that relevant information was missing and those who had not been prompted that relevant information was missing. Among tax preparers with greater specific experience, however, there was no significant difference between the two groups. These results suggest that tax preparers with greater specific experience recognized that relevant information was missing without being prompted, while tax return preparers with lesser specific experience did not.

ACKNOWLEDGMENTS

I thank the members of my committee, especially Chairman Bruce Koch and Dr. William Luker, for their patience and support. I also thank Mrs. Ann Den and Dr. Robert Ricketts for their invaluable assistance and encouragement. I extend my appreciation to Dr. Alan Attaway of the University of Louisville for allowing me to administer and assisting me in administering my task instruments at the Louis A. Grief Tax Institute.

On a larger scale, I thank God for His faithfulness and assistance and my children, Gina, Liza and Phil, for the many sacrifices they have made in order for me to complete this project.

TABLE OF CONTENTS

LIST OF TABLES

Page

Table

CHAPTER I

INTRODUCTION AND MOTIVATION OF THE RESEARCH

The purpose of this research was to examine factors influencing the decision-making processes of professional tax return preparers. Specifically, this research gathered initial evidence regarding the effect of prior knowledge and missing information on recommendations made by tax return preparers in their roles as advisors to taxpayers.

A better understanding of the decision-making processes of tax return preparers is increasingly desirable as more and more taxpayers are engaging professional tax return preparers. According to the IRS, tax return preparers prepare over fifty percent of individual tax returns (IRS 1988). As tax law complexity increases, more taxpayers consult tax return preparers (Long and Caudill 1987). Due to the expanding role of tax preparers in the tax reporting process, it is increasingly important that tax return preparers develop their recommendations to clients in the most efficient and effective manner.

Tax return preparers advise and recommend to their clients the proper tax treatment of the client's income and expenses. Tax preparer judgments required to develop the recommendations may be straightforward, such as whether or not to

include royalties in gross income. Often, however, the judgments deal with areas of ambiguity, such as whether the expenses of a home office should be deducted, or whether or not the passive loss limitation applies to a specific piece of rental real estate.

Research into the effects of experience and missing information on the decision-making processes of tax preparers is useful, because it may provide evidence regarding the desirability of the use of decision aids by the tax return preparer and guidance in the development of those aids. For example, if less experienced tax preparers are failing to recognize when relevant information is missing, and consequently make suboptimal decisions, this would indicate that more detailed questionnaires or checklists may prove beneficial. The use of decision aids, developed as a result of the better understanding of the decision-making processes of tax return preparers, may increase effectiveness by ensuring that the tax return preparer considers all relevant information when making decisions leading to his recommendations to clients. The use of decision aids may increase efficiency by providing some structure in the judgment process in ambiguous tax matters.

How a Tax Return Preparer Works

Marchant et al. (1989) modeled tax problem solving as an iterative process in which the tax return preparer identifies the tax issues and investigates tax authorities (namely, tax statutes, interpretations, Treasury regulations, court decisions, and IRS

rulings). The tax return preparer then may be able to recommend the proper tax treatment of an item. In the alternative, the investigation may have revealed additional tax issues or the need for additional information before a conclusion regarding the proper tax treatment of an item can be reached.

Since tax return preparers prepare tax returns for other individuals, they must obtain information from the client in order to prepare the tax return. The tax return preparer must select what questions to ask the client to obtain sufficient relevant information to prepare the return. One problem arises when the tax return preparer realizes, after the client has left the office, that relevant information is missing. For example, the tax return preparer may interview Clara, a single parent with two children, ages 14 and 16, who have lived with her the entire year and for whom she has provided over 50 percent of the support. The tax return preparer may realize, after Clara has left the office, that no inquiry was made into the possible existence of a pre-1985 agreement that gave the dependency exemptions for the children to the non-custodial parent. Now time and effort must be spent to contact Clara to find out if such an agreement does exist.

Another problem may exist when relevant information is missing and the tax return preparer does not realize it. In the example mentioned above, if a pre-1985 agreement to give the dependency exemption to the non-custodial parent did exist, but the tax return preparer did not think to ask the client about such an agreement, the tax

return preparer would likely recommend (in error) that Clara claim dependency exemptions for each of her children.

Tax return preparers interview tax clients to gather information for the preparation of the client's tax return. Customarily, tax preparers conduct this interview process with the aid of a questionnaire or checklist. Usually, the questionnaire or checklist is sufficient to gather data for preparation of the tax return dealing with the most common tax issues. Use of the questionnaire alone often is not sufficient to gather all relevant information in less common tax matters, matters which often may be complex, ambiguous or both. Tax return preparers will likely question their clients to gather relevant information, noting other information voluntarily provided by the clients. Often tax return preparers will rely on their memories to determine the questions to ask the clients in areas not specifically covered on the client interview questionnaire. The recommendations of tax return preparers are of critical importance in ambiguous tax matters, which require them to exercise professional judgment. For example, the determination of whether an activity is a trade or business or an investment activity is important, because that determination may govern whether losses will be treated as ordinary losses or as capital losses and whether expenses are deductions for adjusted gross income or from adjusted gross income. However, neither the Code nor the Regulations provides a precise definition of what constitutes a trade or business. The tax return preparer then looks to judicial authority for guidance, but findings of the court may not give clear guidance. For

instance, in *Eugene Higgins v. CIR* (25 AFTR 1160, 41-1 USTC, paragraph 9233 (USSC, 1941), the taxpayer owned such a large portfolio of stocks, bonds, and real estate that he rented offices and hired employees to help him manage his properties. The court, however, ruled that he was not in a trade or business, because he merely kept records and collected interest and dividends from his securities. However, in another case (*Walter K. Liang v. CIR*, 23 T.C. 1040, 1955), the court determined that a taxpayer who invested in stocks and bonds was considered to be in business, because the securities were frequently bought and sold in order to make short-term profits. Basically, one must examine all the surrounding facts and circumstances in order to determine the underlying nature of an activity (Kramer et al. 1994). The tax return preparer's professional judgment is most valuable in areas such as these, where the rules are not clearly delineated.

After the client leaves the office, the tax return preparer will prepare the return or possibly give the information to one of the staff to prepare the return for the client. When preparing the return, the preparer must decide what recommendation will be made to the client, including any judgments made in ambiguous tax situations. The tax return preparer may realize at that point that the information is incomplete, and decide to extend the information search, postponing the evaluation until additional information is available. This additional information search is costly, since the tax return preparer must make another contact, using additional time and resources of both the tax return preparer and the client. Alternatively, when faced with incomplete

information, the tax return preparer may choose to go ahead and prepare the return, perhaps modifying the recommendation to be less extreme (i.e., more conservative) than it would have been if complete information was at hand. While this approach may save the tax return preparer time, and the client both time and tax preparation fees, the consequences of making the judgment without all of the relevant information are unknown. The consequences may include the client's paying significantly more tax dollars than would be required if the tax return preparer had all of the relevant information. Alternatively, the tax return preparer's recommendation may result in the taxpayer paying less taxes to the government than would be required if the tax return preparer had considered all of the relevant information. In the extreme, the government could assess the tax preparer a penalty for understatement of tax liability due to an unrealistic possibility of success (Gardner et al. 1991). An understanding of how tax return preparers adjust to the recognized absence of relevant information would be useful.

Tax return preparers encounter another facet of the problem of missing relevant information if they are unaware that relevant information is missing. When tax return preparers do not recognize that important information is missing, they will not be alerted to the possible need to extend their information searches or modify their judgments in light of the incomplete information. Consider a situation in which Tom tells his tax preparers that he has incurred a loss on renting his vacation home in the current year (i.e., the expenses of the vacation home were greater than the income).

He and his wife and child spent eight days in the vacation home. The vacation home was rented for one hundred days at fair market value. Under Sec. 280A, the loss would not be deductible if the vacation home was used as a residence for personal purposes for the greater of (1) 14 days or (2) 10 percent of the number of days the unit is rented at a fair rental (IRC SEC. 280A(d)). Based on this information, the tax preparers may believe (in error) that they had sufficient information upon which to base a decision. If so, they would recommend deduction of the loss, assuming no other restrictions associated with passive loss rules.

Relevant information, unknown by the tax preparer, is that Tom's parents stayed for seven days at the vacation home and Tom's brother spent four other days there. Time spent at the vacation home by Tom's family, including brothers, sisters, spouse, ancestors, or lineal descendants, is deemed to be used by the taxpayer. The total number of days deemed to be used by Tom would actually be nineteen days, which would make the loss nondeductible (IRC Sec. 280A(d)). The tax preparers may not have remembered to inquire regarding other family members' use because they were unaware that there was relevant information missing. An understanding of the factors that influence the recognition of the absence of relevant information could aid in the development of procedures and/or the design of decision aids to help ensure that the existence of relevant missing information has been recognized and incorporated into the decision-making process.

CHAPTER II

LITERATURE REVIEW

This chapter will review research investigating the effects of domain specific experience on judgment. First, research investigating the effects of experience on the judgments of tax return preparers will be reviewed. Next, a review of research regarding how individuals may incorporate missing information in the decision-making process is given. Then, research regarding factors which might influence the recognition of the existence of missing information is reviewed.

The findings of the research reviewed are consistent with the cognitive theory of induction (Holland et al. 1986), which has been applied to tax judgment (Marchant et al. 1988). The basic tenets of this theory are explained and then applied to this research, leading to the development of hypotheses.

Research in the Tax Judgment Literature

Since over half of individual tax returns are prepared by tax return preparers (IRS 1988) and tax return preparers influence taxpayer behavior (Lowe et al. 1993), more research examining the judgment of tax return preparers in preparing tax returns is being done. Though studies of tax return preparers' judgments are limited, researchers are trying to identify and better understand the factors which influence

judgments made by tax return preparers. A review of research examining judgment of experienced and novice tax return preparers follows.

The results of research into the factors influencing tax preparers' judgments are mixed. Several studies have been conducted based on prospect theory. LaRue and Reckers (1989) found that inexperienced tax preparers' judgments were affected by the withholding position of their clients, while experienced tax preparers' judgments were not affected. This finding is consistent with findings from the psychology literature that less experienced professionals working with less highly developed cognitive structures would be more sensitive to the surface features (such as whether a client was underwithheld or overwithheld) than would more experienced professionals with more highly developed cognitive structures.

Kaplan et al. (1988) found that neither the amount of professional experience, nor the outcome of recent experience with the IRS, had an effect on the judgments of tax preparers in unambiguous tax matters. They hypothesized, however, that in more ambiguous tax matters, situational factors (specifically, the probability of audit or amount of probable loss) would have a greater impact on the judgment of less experienced tax preparers (five years or less) than upon preparers with greater (six or more years) experience. This hypothesis is based on the idea that as a tax preparer acquires greater experience, a "scriptual schema" is developed that guides behavior that will be applied over a wide range of situational contexts (Abelson 1976). Less experienced tax preparers will not have this generalized script or "metascript" developed, and will be influenced to a

greater extent by situational conditions (or surface factors). In a real estate tax shelter task using fifty-two "Big Eight" tax preparer subjects, low experience tax preparers' judgments were affected by the probability of audit, while high experience tax preparers' judgments were not affected. However, neither group's judgments were affected by the probable amount of loss (Kaplan et al. 1988).

Lowe et al. (1993) examined the effect of experience on tax return preparers' judgments in association with framing effects. They hypothesized that experienced tax return preparers' judgments would not be affected by the withholding position of a client, while less experienced tax return preparers would be more aggressive when their clients were underwithheld (withholding position is framed as a loss) than when their clients were overwithheld (withholding position framed as a gain). Requiring sixty-seven practicing tax managers from Big Six CPA firms to recommend whether a client should or should not deduct golfing expenses for a trade or business, Lowe et al. found that, indeed, high experience tax return preparers (those with five or more years of tax experience) were not affected in their decision making by the framing of the withholding position of the client. They found that low experience tax return preparers were affected by the framing of the withholding position, but in the opposite direction than was hypothesized. Low experienced tax return preparers were significantly less aggressive with clients who were underwithheld than they were with clients who were overwithheld.

Spilker (1995) studied the effects of declarative and procedural knowledge and time pressure on a tax researcher's ability to locate relevant authority. He found that

subjects with declarative knowledge (i.e., knowledge acquired by instruction) picked out more relevant key words than novices without declarative knowledge, and that subjects with declarative and procedural knowledge (i.e., knowledge acquired through experience) picked out more relevant key words than novices and subjects with only declarative knowledge. Time pressure negatively affected the ability of subjects without declarative or procedural knowledge to pick out our relevant key words. Time pressure had no significant effect on the ability of subjects with declarative knowledge only to pick out relevant key words, while it favorably affected the ability of subjects with declarative and procedural knowledge to pick out relevant key words.

In summary, research has shown that inexperienced tax preparers' judgments were affected by surface features, such as withholding position or probability of an audit, while experienced tax preparers' judgments were not affected by surface features (LaRue and Reckers, 1989; Kaplan et al. 1988; and Lowe et al. 1993). Spilker (1995) found that experienced tax preparers picked out more relevant keywords relating to a tax issue than did novice tax preparers. Time pressure favorably affected the ability of experienced tax preparers to identify relevant keywords, while it either had no effect or unfavorably affected inexperienced tax preparers (Spilker 1995). The research cited above demonstrates that lesser experienced tax return preparers are more likely to be affected by the surface features of a tax issue and less likely to identify relevant keywords than are experienced tax preparers.

Effects of Missing Information on Judgment

In this section, literature is reviewed describing how decision makers adjust their decision making processes when they know relevant information is missing. Another problem exists when individuals do not recognize that important information is missing, and thus do not adjust their decision making processes. Research pertaining to factors that affect the recognition of important missing information is reviewed next.

Judgment when Information is Known to be Missing

In the framework of Anderson's information integration theory (1981, 1982), a person forms a judgment by considering each piece of information associated with a decision, weighted by its relative importance. Several explanations of how decision makers integrate the recognized absence of relevant information have been offered in the psychology literature (Jaccard and Wood 1988). One explanation noted by Jaccard and Wood assumes that the decision makers are risk averse and will moderate the extremity of their judgments in light of incomplete information due to the uncertainty associated with relevant missing information (Yates et al. 1978). Yates et al. found that subjects would give a lower evaluation of an option with missing information than on the same option with an intermediate value given for dimension with the previously incomplete information.

A second explanation noted by Jaccard and Wood (1988) was based on a study by Meyer (1981), that found that when subjects had no information about an attribute, they assumed a "below neutral" value for the attribute. They then integrated it along with known information to make an evaluation. Johnson and Levin (1985) found subjects gave progressively lower evaluations to products when the amount of missing information increased.

Another explanation, cited by Jaccard and Wood (1988), regarding how decision makers react to incomplete information is that decision makers will assume a subjective average or "typical" value for the missing information. While this hypothesis was not tested, a number of subjects did state that they assumed average values for the incomplete information (Slovic and MacPhillamy 1974). Jaccard and Wood (1988) found that subjects imputed a typical or average value for missing information, integrated the information as if it were known, and then negatively adjusted the overall evaluation due to the knowledge that information had to be inferred.

Another possibility is that decision makers will assume that their reactions to the pieces of missing information would be consistent with their reactions to the pieces of known information. That is to say, if the object of evaluation ranks favorably on the known dimensions, decision makers assume the piece of missing information would be consistent and result in a favorable evaluation also (Jaccard

and Wood 1988). Johnson and Levin's (1985) results indicated a refinement of this explanation. If the subjects assumed a positive relationship between the known attributes and the missing attribute, they appeared to assume the missing attribute would be consistent with the known attributes. Similarly, when a negative relationship was assumed between the known attributes and the missing attribute, a good value for a known attribute would lead to an assumed bad value for the missing attribute.

Another possible process, called dimension disregardment, involves the dimension of the missing attribute being completely ignored, and an evaluation being based only on the known attribute dimensions. No inference or devaluations would be made (Jaccard and Wood 1988).

Jaccard and Wood (1988) identified each of the possible explanations, noting that "past research (e.g., Meyer 1981; Yates et al. 1978) suggests that partial devaluation should be the operative psychological process". Their own research designed to test the viability of each process resulted in their describing a "hybrid average imputation-partial devaluation process" (Jaccard and Wood 1988). This process includes the inference of a typical or average value for the missing information and then integration of the inferred value as if it was known. The decision maker then adjusts negatively the overall evaluation in consideration that some of the information had to be inferred (Jaccard and Wood 1988).

The best supported explanation of how decision makers may react or adjust when they recognize the absence of important information is a model wherein the decision maker attaches a negative connotation to the evaluation due to uncertainty. This is the explanation supported by Jaccard and Wood's research (1988) and one consistent with research by Yates et al. (1978), Meyer (1981), and Johnson and Levin (1985). This explanation is the one assumed by the current research.

Judgment when Decision maker is Unaware that Important Information is Missing

Each of the above explanations assumes that the decision maker is aware of the absence of important information. However, the decision maker may not be aware that important information is missing. The absence of important features is not readily identified, detected or easily processed (Agostinelli et al. 1986; Fazio et al. 1982). If individuals are unaware that important information is missing, they will not be alerted to the need to seek further information or to moderate their judgments and the confidence with which those judgments are held.

The level of knowledge that an individual has regarding the domain of the decision may affect the detection that important information is missing. Research has suggested that the knowledge structures of individuals experienced in the content domain is different from that of novices (Adelson 1984; Chi et al. 1981). Individuals experienced in a given domain are believed to have richly detailed knowledge structures that enable them to remember more information at a time (Chase and

Simon 1973), and to process information more extensively (Anderson 1983; Fiske et al. 1983). Experienced individuals are more likely than novices to know which information is relevant and attend to it (Alba and Hutchinson 1987; Johnson and Russo 1984).

Sanbonmatsu et al. (1992) examined how knowledge level would affect the recognition or nonrecognition of important omitted information. They anticipated that individuals with high knowledge in the content domain would recognize the absence of important information, while individuals low in knowledge of the content domain would not. They found that individuals with high knowledge moderated the extremity of their judgments and lowered their confidence in their judgments, whether or not they were prompted to the recognition of the important missing information. Individuals with moderate prior knowledge moderated the extremity of their judgments and lowered their confidence in their judgments when prompted to the existence of important missing information, but failed to do so in the no-prompt condition. In the low knowledge condition, there was no difference in the subjects' extremity of judgment and confidence between the prompt and no prompt conditions. This unexpected result was explained with the help of a postexperimental measurement of perceived importance of the attributes, which indicated that the subjects low in knowledge perceived the missing attributes to be much less important than did the high knowledge or moderate knowledge subjects.

The research previously cited documents attempts to better understand the influence of prior knowledge on judgment. The researchers did not reference one comprehensive cognitive theory upon which the research was based, but a common theme was inherent. The common theme was that some mechanism enabled decision makers with greater knowledge in a specific domain (presumably gained from experience) to analyze problem information and make decisions in a more effective and efficient way.

A model of tax problem solving presented by Marchant et al. (1989) seeks to describe this mechanism. The model is based on a pragmatic theory of inductive inference developed by Holland et al. (1986). This model of tax problem solving, the theory upon which it is based, and how it applies to the research at hand are explained in the next chapter.

CHAPTER III

THEORETICAL FRAMEWORK AND HYPOTHESIS GENERATION

Marchant et al. (1989) describe a cognitive model of tax problem solving, based on the pragmatic theory of induction developed by Holland et al. (1986). This theory is well suited to model the cognitive processes of tax return preparers because it incorporates goal-directed problem solving, uncertainty, and learning that is facilitated better by direct experience than by formal learning (Marchant 1989).

Marchant et al.'s (1989) model describes tax problem solving using four processes: "(1) goal determination, (2) fact and issue identification, (3) rule selection, and (4) analogy". Two of these processes, fact and issue identification and rule selection, are relevant to the current research. In order to understand the cognitive functions proposed to underlie these processes, an understanding of the basic tenets of the theory of induction is necessary. These are discussed in the next few paragraphs and then applied to a tax compliance problem. Finally, the model is used to support the generation of hypotheses.

Theory of Induction (Holland et al. 1986)

This model relies on the theory that tax problem solving is accomplished by utilization of mental models. Mental models are clusters of rules wherein goals and

selected knowledge can be manipulated until the goal is achieved. The mental model is a dynamic representation of the problem (Marchant 1989; Holland et al. 1986). The rules represent knowledge, and can be either conceptual or procedural. Holland et al. (1986) identify three major categories of rules -- exception rules, default rules and procedural rules.

An exception rule is a context-specific concept or procedure, usually derived by direct experience, but could be formed by formal instruction. Often these will be specific memories of events (Holland et al. 1986). Remembering one taxpayer's tax return wherein the cost of fertilizer was deductible because that taxpayer is a landscape professional is an example of an exception rule. Another example would be remembering the cost of another taxpayer's fertilizer not being deductible, since that taxpayer gardened only for enjoyment.

Default rules are general rules about concepts and procedures. Default rules are usually formed by generalizing across a vast number of exception rules, but also could be formed by formal instruction or analogical reasoning (Holland et al. 1986). An example of a default rule would be that expenses incurred in order to generate income are deductible.

The third major category is procedural rules. Procedural rules are used to move the mental model toward a problem solution. One type of procedural rule -- an empirical rule -- specifies how a condition-action relationship should be modeled. An empirical rule may be time dependent (i.e., if this condition exists, then this will

happen). "If a tax payment is late, interest and penalties will accrue" is an example of a time-dependent empirical rule. Empirical rules may also be time independent, i.e., they may be categorical (hierarchical) or associative (nonheirarchical). Categorical empirical rules group concepts or procedures according to their similar attributes, e.g., rent income, royalties, and corporate bond interest are three items that would be included in the category of gross income. Associative empirical rules relate non-hierarchical concepts to one another, just because one concept brings the other to mind (Holland et al. 1986). For instance, thinking that corporate bond interest is taxable may bring to mind that municipal bond interest is generally excluded from gross income.

The second type of procedural rules is inferential rules. Inferential rules specify procedures that guide thinking. Simple inferential rules include the law of large numbers, the representative heuristic, and the availability heuristic. For instance, a tax return preparer might conclude (based on the law of large numbers) that, since the IRS audited forty percent of a sample of fifty returns that claimed a home office deduction, there was a forty percent probability that the next return claiming a home office deduction prepared by the tax return preparer would be audited (Marchant 1989). More complex inferential rules, called pragmatic reasoning schemata, form an intermediate level of reasoning that abstracts from both context-free rules and specific memories. This type of reasoning develops from experiencing a wide variety of problems, and may be applied over a broad range of

domains. Rules governing cause and effect, permission (in order to do this, you must do this first) and obligation (if this happens, you must do this) are examples of pragmatic reasoning schemata (Holland et al. 1986).

The third type of procedural rules -- system operating principles -- are the rules that guide the way the mental model operates. These rules guide the retrieval of rules relevant to the mental model, selection among competing rules, and action initiation. Once a goal is identified, rules compete for retrieval on the basis of match, strength, specificity and support. In order to be selected for the model, a rule has to have a condition that "matches" the goal. Among those rules that match, rule strength (how well and how recently the rule worked in the past) is considered. Also considered is specificity, the degree of detail incorporated in the rule and how well those details describe the problem environment. Support is also considered. Support refers to the degree the rule "fits in" with the other rules to form a cohesive mental model (a model that "makes sense") (Holland et al. 1986).

Once the rules have been selected for the mental model, then the model can be manipulated to work toward a problem solution. Once a solution is generated, the individual considers if the solution is consistent with known information, if it would indeed solve the problem, and if the solution is feasible given what information is known. If not, the individual may revise or refine the rules used in the model or may generate new rules in order to develop a satisfactory solution (Holland et al. 1986).

New rules may be generated by combining existing rules that are active in the same context or are close in temporal order (based on possible cause and effect). Rule refinement and rule generation occur naturally through experience (Holland et al. 1986). Rules can also be generated through education, but there is evidence that individuals may have difficulty linking the rules generated through formal education with other rules in their mental models (Cheng et al. 1986). In addition to rule refinement and the generation of new rules, the process of induction also provides association between rules and clustering among rules. This creates a more highly developed knowledge structure as experience increases which allows for more efficiency in problem solving. This more highly developed knowledge structure also makes it easier for individuals to generate new rules, because once a rule is formed, much of the encoding and clustering work has been done for the generation of related rules (Holland et al. 1986).

Theory Applied to Tax Problem

Marchant et al. (1989) applied the inductive framework to a tax research problem in which a client has made support payments to a spouse before the issuance of a divorce decree. Depending upon the experience of the tax return preparer, the tax return preparer may depend upon existing knowledge to identify the deductibility of the payments as alimony as the pertinent issue. Since some of the payments were made before the divorce decree, the tax preparer may need to consult

tax authorities to see which payments qualify for the deduction. After reading the relevant literature, the preparer may need additional information from the client, such as whether there was a written agreement prior to the divorce and whether the client was living apart from the spouse.

In this scenario, the goal would be determining the proper tax treatment of the predivorce support payments. This goal would combine with selected knowledge (rules which successfully competed for inclusion in the mental model), which might include a general knowledge about divorce and alimony, and more specific knowledge of separation agreements, but no specific knowledge about existence of an agreement in the specific client's case at hand. Assuming four possibilities -- an oral agreement, a written agreement, decree retroactive, and no agreement -- each would compete for inclusion in the mental model based on match, strength, specificity and support. Since none of the rules have sufficient support to be included in the mental model, this will activate the action -- "Request more information from the client about the agreement" (Marchant et al. 1989).

Assume the new information from the client was that the agreement was oral and no written document existed until the divorce decree. This new information would become part of the active mental model, combining with the tax preparer's knowledge of divorce and alimony and separation agreements. The mental model would then form a solution that the alimony is not deductible. This solution would be tested to see if it was consistent with known information, if it would solve the

problem, and if it was feasible. Since it would pass all of these tests, the conclusion could then be recommended to the client (Marchant et al. 1989). The rules included in the successful model would each gain strength for possible inclusion in future mental models (Holland 1986).

Model Applied to Current Research and Generation of Hypotheses

This model of tax problem solving proposed by Marchant et al. (1989) applies to this research. The tax preparer first determines a goal -- that of determining the proper tax treatment of a specific item. The goal combines with the information given by the client and relevant knowledge (rules which have successfully competed for inclusion) to form a mental model. The mental model operates to form a conclusion. If the rules have sufficient match, strength, specificity and support, the model will be confirmed, and will lead to a conclusion being recommended to the client. If, however, the rules do not have sufficient match, strength, specificity and support, the mental model will not be confirmed, no conclusion will be generated, and action will be taken to get more information to refine the rules or generate new rules.

New rules may be generated through education, but there is evidence that individuals may have difficulty linking the rules generated through formal education with other rules in their mental models (Cheng et al. 1986). Knowledge structures or rules are, however, generated and refined through experience. The confirmation

threshold for novices may be different from the thresholds of individuals with experience. Novice tax preparers with less elaborate knowledge structures (fewer rules to choose from) may not recognize the absence of relevant information. The match, strength, specificity and support of the rules in the mental model of a novice may pass the confirmation threshold because they are unaware that relevant information is missing. This leads to the generation of the first hypothesis:

> H_1: Experienced tax preparers will correctly classify significantly more items than novice tax preparers in a task regarding relevance of items to a specific tax issue.

This hypothesis was tested by giving tax return preparers (both experienced tax return preparers and novices) a tax issue and a list of items which includes both relevant and irrelevant items. Subjects were asked to classify each item as an item that would influence them to encourage deduction of home office expenses, items that would influence them to discourage deduction of home office expenses, or items that would have no effect on their recommendation (items that are not relevant to the decision). The responses from the experienced group were compared to the responses from the novice group. It was expected that the experienced tax return preparers would correctly classify significantly more items than the novice tax return preparers, because experience facilitates the generation and refinement of rules used in the mental model, whereas rules generated through formal education are not readily associated to other rules in the mental models (Cheng et al. 1986).

Ideally, tax preparers will have information pertaining to all of the critical factors of a tax issue when determining their recommendations. However, under some circumstances, the tax preparer will be faced with an absence of information pertaining to one or more relevant factors relating to the tax issue at hand. Under these circumstances, the model described by Jaccard and Wood (1988) would predict that the tax preparer will lessen the strength of the recommendation to accommodate for the uncertainty introduced by the absence of information relating to a relevant factor of the tax issue (Sanbonmatsu et al. 1992). This leads to the generation of the second hypothesis:

> H_2: The strength of recommendations of tax preparers who have no relevant information missing will be greater than the strength of recommendations of tax preparers when they know that relevant information is missing.

This hypothesis was tested by randomly dividing experienced subjects into three groups: a no missing information group, a missing information/prompt group, and a missing information/no prompt group. One group (the no missing information group) received a task with information relating to all relevant factors of a tax issue. A second group (the missing information, prompt group) was given the same task, but received information on only some of the relevant factors. The subjects in the missing information/prompt group were told that no information is available on one of the relevant factors of the tax issue. Subjects in each group were requested to make judgments regarding the proper treatment of the tax issue and record the

strength of their recommendations to the client on a semantic differential scale anchored at strongly discourage deduction, uncertain, and strongly encourage deduction. The average strength of recommendation of the no missing information group and the missing information/prompt group were then compared to see if they were significantly different from one another. It was expected that the average strength of recommendation of the no missing information group would be greater than the average strength of recommendation of the missing information, prompt group.

If the knowledge structures of tax preparers with greater specific experience are more elaborate, thus enabling them to be aware of more relevant factors than tax preparers with lesser specific experience, tax preparers with greater specific experience should be able to identify when relevant information is missing better than less specifically experienced tax preparers. Sanbonmatsu et al. (1992) found that subjects highly knowledgeable in a specific domain were more likely to be influenced in their judgments by the omission of relevant information than less knowledgeable subjects. This led them to conclude that sensitivity to relevant missing information increased with experience. This would be consistent with the theory that knowledge structures (rule clusters and associations) more fully develop with experience. Jaccard and Wood (1988) found that when subjects recognized that relevant information was missing, they would infer a typical value for the missing information, and then adjust negatively the overall evaluation due to the uncertainty

associated with the missing information. This is an example of a system operating principle. It follows, then, when relevant information is missing, experienced tax preparers will recognize that relevant information is missing, and they will adjust the strength of their recommendations in light of the uncertainty associated with the missing information. Less specifically experienced tax preparers, on the other hand, are less likely to be aware that relevant information is missing due to their less highly developed knowledge structures. Since they are unaware that relevant information is missing, they will not recognize the uncertainty introduced by the absence of relevant information, and consequently, will not lessen the strength of their recommendations. This leads to the generation of the third hypothesis:

> H_3: The difference between the strength of recommendations of tax preparers with greater specific experience who have been prompted that relevant information is missing and those who have not been prompted will be less than the difference in strength of recommendations of tax preparers with lesser specific experience who have been prompted that relevant information is missing and those who have not been prompted.

Hypothesis 3 was tested by randomly dividing a group of tax return preparers into three groups. The missing information, no-prompt group was given information on all but two relevant factors pertaining to a tax issue. The missing information, prompt group was given the same information as the first group, but was also alerted that information on one relevant factor was not available. The subjects were asked to determine the recommendations they would make to the client regarding the

deductibility of expenses and to record the strength of their recommendations to the client on a 9-point semantic differential scale anchored at -4, 0, +4 (strongly discourage deduction, uncertain, strongly encourage deduction). The subjects' responses were stratified by the amount of specific experience based on their responses to a demographic questionnaire.

CHAPTER IV

METHODOLOGY AND RESULTS

Subjects

Hypothesis 1

Two hundred eleven usable subjects were divided into two groups -- novice and experienced -- based on a general experience measure, namely, the number of tax seasons the subjects had worked preparing individual tax returns. Seventy-two subjects who had never prepared individual tax returns professionally were classified as novices. These subjects were accounting students from two undergraduate universities who were just completing an individual tax course. In order to be considered usable, students must have studied the home office deduction and the issues of deductibility of alimony and child support in class and must not have previously prepared tax returns for a fee. Additionally, the students must have missed no more than two of the basic tax questions included in the demographic questionnaire. Three of the students missed two basic tax questions. The remainder of the students missed one or less.

One hundred thirty-nine subjects, who had worked as tax preparers for at least one tax season preparing individual tax returns, were classified as experienced. These subjects were either practicing CPAs from small accounting firms or participants at tax training update seminars. The measure of general experience, i.e., the number of tax

seasons worked by the subjects preparing individual tax returns, was requested on a demographic questionnaire which was completed after the tasks had been administered. Subjects who failed to respond to the task instrument (i.e., did not give strength of recommendation) or who failed to respond to the question asking number of tax seasons worked were not usable and were omitted from the study. None of the experienced subjects missed more than one of the basic tax questions included on the demographic questionnaire. The general experience measure was used to separate the subjects into two distinct groups -- one group, all of whom had only formal education regarding tax preparation (the novice tax preparers), and the other group, all of whom at worked professionally at least one tax season (the experienced tax preparers).

The descriptive statistics for the subjects used to test Hypothesis 1 are given below:

Table 1
Descriptive Statistics for Number Correct

	NOVICES	EXPER
N	72	139
MEAN	11.597	12.576
SD	1.9905	2.2809
MINIMUM	7.0000	6.0000
MEDIAN	12.000	13.000
MAXIMUM	16.000	17.000

Hypotheses 2 and 3

Since Hypotheses 2 and 3 compare subjects with greater specific experience to subjects with lesser specific experience, in order to be usable, subjects must have met not only the criteria above given for experienced subjects for Hypothesis 1, but also must have encountered the issues of home office deduction and the deductibility of alimony and/or child support in practice. Nineteen of the experienced subjects had not encountered these issues and were omitted from the analysis of data for Hypotheses 2 and 3. There were 120 usable subjects, all of whom had general experience, i.e., all had prepared tax returns professionally for three or more tax seasons. The subjects had a mean age of 47.425 years, with a standard deviation of 11.311 years. On average, the subjects had prepared individual tax returns for 13.533 seasons, with a standard deviation of 9.1136 seasons. The measure of specific experience was the times the tax preparer had encountered the issue of deductibility of alimony and/or child support payments in practice. This information was gathered from demographic questionnaires and coded on a scale from 1 to 5 (1 being zero times, 2 being one to two times, 3 being three to five times, 4 being six to ten times, and 5 being over ten times). When asked how many times they had encountered the issue of deductibility of alimony and/or child support payments in practice, the subjects' responses resulted in a mean score of 3.7333, on a scale wherein 3 was three to five times and 4 was six to ten times. The variables One,

Two and Thr are dummy variables for the three experimental groups (no missing information, missing information/prompt group, missing information/no prompt group). The variables Inter4, Inter5, and Inter6 are interaction terms of the specific experience variable and the three experimental groups, respectively. The variable "Strength" was coded as a dummy variable, with strong recommendations (recommendations of +4 and -4) being coded as "1" and less strong recommendations (recommendations of +3 through -3) being coded as "0". The descriptive statistics are shown for these variables on Table 2.

Table 2
Descriptive Statistics for Variables In Hypotheses 2 & 3

	Age	Season	TimeACS	ONE	TWO	THR	Inter4	Inter5	Inter6	Strength
N	120	120	120	120	120	120	120	120	120	120
MEAN	47.425	13.533	3.7333	0.3667	0.3333	0.3000	1.3250	1.2417	1.1667	0.6167
SD	11.311	9.1136	1.2143	0.4839	0.4734	0.4602	1.8928	1.8920	1.9156	0.4882
MIN	24.000	3.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MEDIAN	47.000	10.000	4.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
MAXI	72.000	37.000	5.0000	1.0000	1.0000	1.0000	5.0000	5.0000	5.0000	1.0000

All non-nominal variables essentially lie within the normal range, i.e., I cannot reject the null hypothesis of normality.

Methodology

Hypothesis 1

Subjects were given a tax issue, i.e., whether or not to recommend that a client deduct expenses for a home office. The subjects were asked to classify items as either items that would influence them to encourage deduction of home office

expenses, items that would influence them to discourage deduction of home office expenses, or items that would have no effect on their recommendation (items that are not relevant to their decision). The proper classification of the items are given in Appendix B. The number of items properly classified by experienced tax return preparers was compared to the number of items properly classified by novice tax preparers to see if experienced tax preparers properly classified significantly more items than novice tax preparers. The items included in the task were developed pursuant to a close reading of Residential Property Used for Business section of CCH Federal Tax Service (1994). Proper classification of the items was verified by a panel of three tax experts. It was expected that experienced tax preparers would properly classify significantly more items than would novice tax preparers.

The basic analytical technique is ordinary least squares regression. The dependent variable "Number Correct" was the number of items properly classified by each subject. The independent variable "Experience" was coded as a dummy variable, with the seventy-two students who had never prepared individual tax returns professionally being coded as "0", and tax preparers who had prepared individual tax returns for at least one tax season being coded as "1". [1]

---

[1] Hypothesis 1 contrasted the ability of experienced tax preparers to correctly classify items regarding relevance to a tax issue with the ability of novice tax preparers (tax preparers with only formal education and no general experience). Thus, the specific experience variables were not used in the test of Hypothesis 1.

Hypotheses 2 and 3

The tax return preparers were randomly divided into three groups. One group (the no missing information group) was given information regarding all relevant factors relating to a tax issue. A second group (the missing information, prompt group) was given information on only some of the relevant factors; information on one relevant factor was left out. These subjects were alerted to the fact that there was a relevant factor for which they had no information. A third group (the missing information, no-prompt group) was given the same case as the second group (information pertaining to only some of the relevant factors; no information on one relevant factor). The third group, however, was not alerted to the absence of relevant information.

The subjects were asked to make a judgment regarding whether they would encourage or discourage their client to take a deduction. The subjects were asked to record the strength of their recommendations on a 9-point semantic differential scale anchored at -4, 0, and +4 (strongly discourage deduction / uncertain / strongly encourage deduction). The higher the absolute value of the response, the greater the strength of recommendation. Responses of -4 and +4 were classified as strong recommendations since they represent the two extreme positions on the scale (strongly discourage deduction and strongly encourage deduction) and denote a relative degree of certainty on the part of the subject. Responses of -3 through +3 represent moderate positions on

the scale, indicating a relative degree of uncertainty on the part of the subject, and accordingly were classified as weaker recommendations.

The basic analytical technique is a hierarchical logistical regression. The independent variables age, general experience and specific experience were collinear. The interactions terms, the product of the main effects, are self-evidently highly collinear. Since I am interested in the main effects of specific experience and the interactive effects of specific experience and experimental condition on strength, a hierarchical multiple regression is appropriate. This partials the effects of age and general experience from specific experience, and the effects of specific experience from the interactions.

The dependent variable "Strength" was coded as a dummy variable, with strong recommendations (recommendations of +4 and -4) being coded as "1" and less strong recommendations (recommendations of +3 through -3) being coded as "0". The independent variables represent group membership in experimental condition groups of the following (1) no missing information group, (2) missing information/prompt group and (3) missing information/no prompt group. Dummy coding was used, with membership in the no missing information group as a reference group. The independent variable "Two" denotes membership in the missing information/prompt group and the independent variable "Thr" denotes membership in the missing information/no prompt group. Testing of Hypothesis 2 included "Strength" as the dependent variable and dummy coded "Two" and "Thr" as independent variables, using

the no missing information group as the reference group. The test of significance between the reference group and the independent variable coded Two was the test of Hypothesis 2.

Hypothesis 3 was tested using "Strength" as the dependent variable and dummy variable coded "Two" and "Thr" as independent variables, with the no missing information group as a reference group, as discussed above, as well as other variables discussed below. The independent variable "TimesACS" was included as a measure of specific experience. It represents the number of times the subjects had encountered in practice the issues of deductibility of alimony and/or child support. This variable was coded as 1 for no times, 2 for one or two times, 3 for three to five times, 4 for six to ten times, and 5 for over five times. The interaction of specific experience and experimental condition (membership in the no missing information, missing information/prompt or missing information/no prompt groups) was also included. Dummy variable coding was used, with the interaction of specific experience ("TimesACS") and the no missing information group used as a reference group. "Inter5" and "Inter6" represented the interaction of specific experience and the missing information/prompt group and the interaction of specific experience and the missing information/no prompt group, respectively. The age of the subjects, "Age", was measured in years. The number of seasons the subjects had worked preparing individual tax returns, "Seasons" , was included as a measure of general experience.

"Age" and "Seasons" were included as control variables to eliminate systematic differences associated with age and general experience.

Analysis of Results of the Study

Hypothesis 1

Table 3 is a summary of the relationship of general experience and the number of items correctly classified, using ordinary least squares regression.

Table 3
Unweighted Least Squares Linear Regression of Number Correct

Predictor Variables	Coefficient	Std Error	Student's *t*	*P*
Constant	10.6189	0.54774	19.39	0.0000
Exper	0.97832	0.31750	3.08	0.0023

R^2	0.0435	Residual Mean Square (MSE)	4.78123
Adjusted R^2	0.0389	Standard Error of the Estimate	2.18660

Source	DF	SS	MS	*F*	*P*
Regression	1	45.3967	45.39670	9.49	0.0023
Residual	209	999.2760	4.78123		
Total	210	1044.6700			
Cases Included	211	Missing Cases	0		

This analysis indicates the mean difference between the no missing information group and the missing information/prompt group is .97832 in the hypothesized direction, which is statistically significant at $P = .0023$. The experienced group of subjects correctly classified significantly more items than did the novice group. Thus, the null hypothesis is rejected.

Hypothesis 2

Table 4 is an analysis of the relationship between experimental condition (membership in the no missing information group, the missing information/prompt group or the missing information/no prompt group) and strength of recommendation. This was the first step in a hierarchical logistical regression.

Table 4
Hierarchical Logistical Regression of Experimental Condition on Strength

Response: Strength		Model R^2	0.0058
Model Chi-square .68	D. F. 2	Prob Chi-Square=0	0.7119

Parameter Estimation Report

Response: STRENGTH

Variable	Beta Estimate	Standard Error	Chi-square Beta = 0	Prob Beta = 0	Last R^2
Intercept	.46262350	.3096136	2.23	0.1351	0.0187
Two	-.1603426	.4451543	0.13	0.7187	0.0011
Thr	.23052370	.4699580	0.24	0.6238	0.0021

As the analysis shows, Model R^2 is .0058 and the probability of making a Type I error is .7119. Thus, I fail to reject the null hypothesis.

Hypothesis 3

Hypothesis 3 was tested by testing for significance of the interaction of specific experience and the three experimental conditions (no missing information, missing information/prompt, and missing information/no prompt), controlled for age and general experience. The basic analytical technique was hierarchical multiple logistic regression, due to the collinearity of the data and the need to test marginal

effects. The hierarchical regression enables the testing of significance of the interaction set with the main effects partialled. The interaction terms are by their very nature highly collinear with the main effects, and therefore, the hierarchical regression will disclose the incremental effect of the interactions on the relationship. The independent variables of age, general experience (Seasons) and specific experience (TimesACS) are collinear. Hierarchical regression is appropriate, introducing age and general experience (Seasons) before specific experience (TimesACS). This results in the effects of specific experience being revealed, with the effects of age and general experience being partialled out, i.e., it gives the marginal effect of specific experience on strength. Introducing the interaction set after specific experience partials the effects of specific experience from the interactions. The results of this multiple logistic regression is given in Table 5. As the analysis shows, the Model R^2 is .1127 and the probability of making a Type I error is .0474. A Chi-square test for the significance of the incremental effect of the interaction set was statistically significant at the .1 level. The incremental effect is measured by the log likelihood ratio. The Chi-square value is two times the decline in the likelihood ratio, for one degree of freedom in this case.

Table 5
Hierarchical Logistical Regression on Strength

Logistic Regression
Response: STRENGTH Model R^2 0.1127
Model Chi-square 14.22 D.F. 7 Probe Chi-square = 0 0.0474

Parameter Estimation Report

Response: Strength

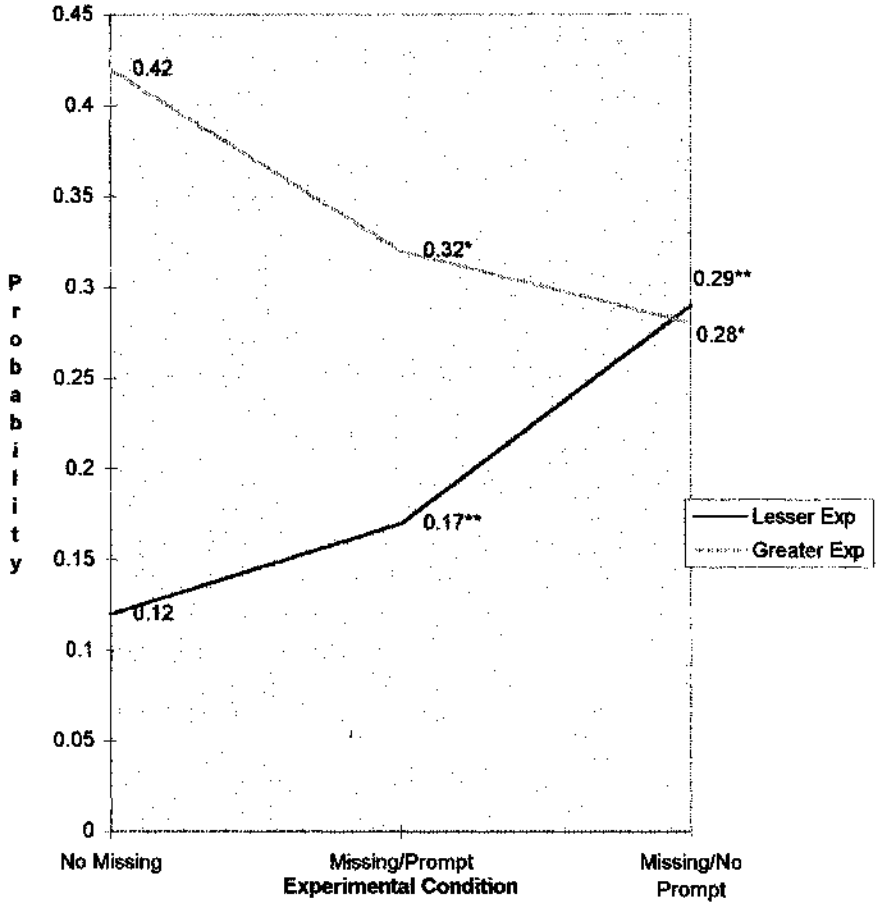
Variable	Beta Estimate	Standard Error	Chi-square Beta = 0	Prob Beta= 0	Last R^2
Intercept	-4.10071	1.541499	7.08	0.0078	0.0594
Two	1.269984	1.603157	0.63	0.4283	0.0056
Thr	3.045848	1.62703	3.50	0.0612	0.0303
Age	4.466121E-02	2.301688E-02	3.77	0.0523	0.0325
Seasons	1.645152E-02	2.759807E-02	0.36	0.5511	0.0032
TimesACS	.7372526	.3018548	5.97	0.0146	0.0506
Inter5	-.3582332	.42562	0.71	0.4000	0.0063
Inter6	-.7774546	.4215333	3.40	0.0651	0.0295

To interpret the effects of the interactions, the cell means of the probabilities of the subjects making a strong recommendation were examined. The results are given in Table 6 and graphed in Figure 1. Table 6 reveals the probabilities of getting a strong recommendation from a subject in each of the experimental groups (the no missing information group, the missing information/prompt group and the missing information/no prompt group), classified by level of specific experience.

Table 6
Mean Probabilities of Subjects Giving a Strong Recommendation

	No Missing	Missing/ Prompt	Missing/ No Prompt
Lesser Exp	0.12	0.17	0.29
Greater Exp	0.42	0.32	0.28

Figure 1 - Mean Probabilies of Strong Recommendation



*The difference between .32 and .29 is statistically insignificant.
**The difference between .17 and .28 is significant at the .1 level.

As indicated on Table 6 and Figure 1, for subjects with greater specific experience, there was only a four point difference in the probability of getting a strong recommendation between the missing/prompt group (at .32) and the missing/no prompt group (at .28), which is not statistically significant. However, for subjects with lesser specific experience, there was a twelve point difference of

getting a strong recommendation between the missing/prompt group (at .17) and the missing/no prompt group (at .29), which is statistically significant at a .1 level.. The difference between the cell mean probabilities were tested using a pseudo-*t* ratio. The standard error was calculated. The pseudo-*t* for the specific interaction effect is simply the square of the Chi-square. Subjects with greater specific experience were much less responsive to the prompt than were subjects with lesser experience. Thus, the null hypothesis is rejected.

Another finding, though not hypothesized, is that the strengths of recommendations of subjects with lesser specific experience increased as the amount of information or prompting decreased, while the opposite is true for subjects with greater experience. The strengths of recommendations of subjects with greater specific experience decreased as the amount of information or prompting decreased.

Reliability and Manipulation Checks

The demographic questionnaire included five basic tax questions to measure minimum competency and motivation for completing the tasks. Three of the student subjects missed two questions. The remaining students missed no more than one question. None of the experienced subjects missed more than one question. It was concluded from this result that the subjects were at least sufficiently competent and motivated to be used in the study.

The experienced subjects were asked in the Task Two instrument for their perception of the realism of the scenario of alimony and/or child support case. The subjects were asked to choose between very realistic, realistic, unrealistic, and very unrealistic. Twelve percent responded "Very Realistic", 44 percent responded "Realistic", 34 percent responded "Unrealistic", 7.5 percent responded "Very Unrealistic", and 2.5 percent did not respond to the question. This degree of perceived realism was deemed adequate for purposes of this study.

All subjects were asked how interesting they found the questionnaire (task instrument). They were asked to choose between very interesting, somewhat interesting, somewhat uninteresting and very uninteresting. The percentage of responses for each choice are given below in Table 7.

Table 7
Responses by Subjects to Inquiry of Interest in Questionnaire

	Students	Experienced	Total
Very interesting	17%	24%	22%
Somewhat interesting	63%	58%	60%
Somewhat uninteresting	13%	13%	14%
Very uninteresting	4%	4%	4%
No reply		1%	

Eighty-two percent of the subjects found the questionnaire (Booklet Two) either very interesting or somewhat interesting. The relatively high degree of interest in the tasks is a positive factor in the assessment of motivation of the subjects.

Subjects were asked after completing Task II (Section III) if they had sufficient information with which to make a decision. This was included as a task manipulation check. The responses from the subjects are given below by experimental condition. Sixty percent of the subjects in the no missing information group said they did have sufficient information, with the other 40 percent saying they did not. Fifty-five percent of the subjects in the missing information/prompt group said they had sufficient information to make a decision, 40 percent said they did not, and 5 percent did not reply. Of the subjects in the missing information/no prompt group, 38 percent said they had sufficient information, 57 percent said they did not, and 5 percent did not reply. Of the subjects taken as a whole, 52 percent said they had sufficient information, 45 percent said they did not, and 3 percent did not reply. The percentage of subjects who said they had sufficient information with which to make a decision declined from 60 percent to 55 percent to 38 percent from the no missing information group to the missing information/prompt group to the missing information/no prompt group. These percentages are in the desired pattern, suggesting that the manipulation was effective.

Subjects were asked, if they did not have sufficient information, to specify what other information was needed. The responses given, categorized by experimental condition, are included in Appendix C. Most responses indicate that the subjects did recognize the essence of the problem in the task, if not the solution.

CHAPTER V

CONCLUSIONS

Hypothesis 1

Experienced tax preparers correctly classified significantly more items than novice tax preparers in a task regarding the relevance of items to a specific tax issue, as Hypothesis 1 predicted. This finding held true using both general experience measures and specific experience measures. Tax preparers who had worked at least one tax season preparing individual tax returns properly classified on the average only one item more than did novice tax preparers (accounting students who had essentially completed an individual tax course, but who had worked no seasons preparing individual tax returns). This relatively small, though statistically significant, difference in the number of items correctly classified may be the result of the relatively low reliability of the items in the task. The reliability coefficient of the items using Cronbach's Alpha was .53. The analysis using specific experience, controlling for the effect of general experience, also showed that as specific experience increased, the number of items correctly classified increased. These findings are consistent with Spilker (1995) who found in a tax-related task that subjects with declarative knowledge (i.e., knowledge acquired by instruction) picked

out more relevant keywords than novices with no declarative knowledge and subjects with declarative and procedural knowledge (i.e., knowledge acquired through experience) picked out more relevant key words than novices and subjects with only declarative knowledge. The findings of this research corroborate Spilker's findings in that subjects with procedural knowledge (acquired through experience) correctly classified more items than subjects with only declarative knowledge (students completing individual tax courses.)

Hypothesis 2

Hypothesis 2 predicted the strength of recommendations of tax return preparers who have no relevant information missing would be greater than the strength of recommendations of tax preparers when they knew that relevant information was missing. This hypothesis was based on a model described by Jaccard and Wood (1988) wherein the subjects adjusted for lack of certainty by lessening the strength of their recommendations. However, in this analysis, there was no significant main effect of experimental group (no missing information, missing information/prompt, or missing information/no prompt) on strength of recommendation. Thus, I found no support for this hypothesis.

Some insight may be given by a close examination of Table 6, which shows the probabilities of getting a strong recommendation from each of the experimental groups. One might note, looking at the probabilities of getting a strong

recommendation in the no missing information group, that the probability is much larger for the greater specific experience group (.42) than the lesser specific experience group (.12). Indeed, tax preparers with greater specific experience behaved as hypothesized, with the subjects with no relevant information missing giving stronger recommendations than subjects who did have relevant information missing and were prompted that relevant information was missing. Subjects with lesser specific experience did not follow the same pattern. Among subjects with lesser specific experience, the no missing information group gave weaker recommendations than the missing information/prompt group. A possible explanation for this is that the more facts the lesser specifically experienced subjects are presented with, the more likely they are to regard a situation as uncertain. Lesser specifically experienced subjects in the missing information/prompt group may have been more certain than subjects in the no missing information group, because they had less information to process. It takes cognitive effort to process information. To minimize the cognitive effort, the subjects with lesser specific experience may prefer less information, i.e., smaller cue sets. It is possible that subjects with lesser specific experience failed to recognize the relevance of all of the information given in the no missing information task, but rather was confused by it, possibly suffering from information overload. If so, the information included in the no missing information task which was not included in the missing information/prompt group task (namely, the existence, names and ages of children) may have created more uncertainty than the prompt that relevant

information was missing did in the minds of the lesser specifically experienced subjects. Alba and Hutchinson (1987) proposed three possible explanations for this type of finding.[2] Because of novices' inferior abilities to comprehend and evaluate items in a task, they may not deeply process the items. Even when the items are comprehended, novices may not recognize the importance (i.e., relevance) of the items. Even if novices do recognize the importance of the items, when given a number of items to consider, novices "may eliminate attributes on the basis of expediency rather than importance" in order to reduce cognitive effort (Alba and Hutchinson 1987, 419). Of these three possible explanations, failure among subjects with lesser specific experience to recognize the relevance in this task of the existence and ages of children appears most likely to explain the results.

---

[2] Alba and Hutchinson (1987) gave these explanations for the processing of information by novices. The same explanations may apply to tax preparers with lesser specific experience in they had encountered the specific tax issues of alimony and/or child support only three to five times, on the average, whereas the subjects with greater specific experience encountered the specific tax issue over ten times on the average. The additional encounters by the subjects with greater specific experience may have resulted in a more highly developed knowledge structures which facilitated not only rule refinement and generation of new rules, but also provides clustering among rules. According to Holland et al. (1986), this could increase efficiency in problem solving, because much of the work of encoding and clustering rules has already been done by the subject with greater specific experience. In comparison to the average of over ten encounters experienced by the subjects with greater specific experience, the average of three to five encounters experienced by the lesser specifically experienced subjects is relatively nominal. The rule generation and encoding may have only just begun by the lesser specifically experienced subjects and their mental models may have just started to develop. The lesser specifically experienced subjects in this study may not be unlike the novices referred to in Alba and Hutchinson (1987) in that the mental models of both sets of subjects may have only begun to develop.

Hypothesis 3

The difference between the strength of recommendations of greater specifically experienced tax return preparers who have been prompted that relevant information is missing and those who have not been prompted was less than the difference in strength of recommendations of tax preparers with lesser specific experience who have been prompted that relevant information is missing and those who have not been prompted. As shown in Table 6, the significant difference in probabilities of getting a strong recommendation between the missing information/prompt group (.17) and the missing information/no prompt group (.29) of the tax preparers with lesser experience is an indication that prompting had an effect on the strength of recommendation of the tax preparers with lesser specific experience. When prompted to the existence of missing information, tax preparers with lesser specific experience gave weaker recommendations than the unprompted group. This supports the idea that the tax preparers with lesser specific experience who were not prompted that relevant information was missing did not recognize that relevant information was missing, in that the strengths of their recommendations are significantly greater than the strengths of recommendations of tax preparers with lesser specific experience who were prompted that relevant information was missing. Among tax preparers with greater specific experience, there was no significant difference between the prompt and no-prompt groups. This is consistent with the idea

that the tax preparers with greater specific experience recognized the absence of relevant information, whether or not they were prompted. These findings are consistent with that of Sanbonmatsu, Kardes and Herr (1992).

An interesting finding of this research, although not hypothesized, is that the strengths of recommendations of tax preparers with lesser specific experience were greater when subjects were prompted that information was missing than when there was no missing information. Additionally, the strengths of recommendations of tax preparers with lesser specific experience were even greater when there was missing information and no prompt than in either of the other two conditions. Exactly the opposite was found for tax preparers with greater specific experience (See Figure 1). Tax preparers with greater specific experience gave the strongest recommendations when they had no missing information, gave recommendations of lesser strength when they were prompted that relevant information was missing, and again of even lesser strength when relevant information was missing and they were not prompted to that fact. This pattern of responses by tax return preparers with greater specific experience is consistent with the findings of Sanbonmatsu et al. (1992) and Yates et al. (1978).

The unhypothesized finding of lesser specifically experienced tax preparers having a higher probability of giving a strong recommendation when they are prompted to the fact that information is missing than when they have no missing information could be explained in a number of ways. Lesser specifically experienced

individuals may have less fully developed knowledge structures that were capable of processing the number of facts in the missing information/prompt case, but had difficulty in processing of the facts in the no missing information condition. Rather than expend the increased cognitive effort required to process the additional information given in the no missing information case, the lesser specifically experienced subjects may have elected to make a decision without processing the additional information, choosing instead to decrease the strength of their recommendation. It may be that the lesser specifically experienced subjects prefer a smaller set of cues, or are just more certain in their recommendations when there are fewer facts to cloud the issue. It may be that the tax preparers with lesser specific experience, when faced with no missing information (i.e., the same case as the other conditions except that the existence, names and ages of children were given), recognized that they did not know the relevance of all of the items given in the case, and thus lessened the strength of their recommendations due to that uncertainty. Tax preparers with lesser specific experience who were in the missing information/prompt group may have experienced a degree of uncertainty related to the prompt that there was no information regarding existence of children. The uncertainty introduced by the prompt, however, may have been less than the uncertainty introduced by the specific information given in the no missing information condition. The tax preparers in the no missing information group may have recognized that the names and ages of the children were probably relevant, but did not know exactly how this information

should impact their recommendations. Some of the tax preparers with lesser specific experience in the missing information/prompt group may have thought the existence of children could not have been critical, since the information was not given. Tax preparers with lesser specific experience in the missing information/no prompt group gave recommendations of the greatest strength of the three conditions. This is consistent with the idea that these tax preparers failed to recognize that relevant information was missing, thereby not experiencing uncertainty related to missing information, and thus did not adjust the strengths of their recommendations.

Another finding of this research, although not hypothesized, is that general experience had no significant effect on the strengths of recommendations of tax preparers to their clients. Specific experience, controlled for the effect of general experience, however, was highly significant (see Table 4). This is consistent with the findings of Bonner (1990) "that training and experience in a task creates task-specific knowledge of relevant cues which can aid in cue selection".

Limitations of the Study

Several factors limit the external validity or generalizability of the study. The tasks required of the subjects were artificial in that they were not rich in detail. Additionally, since the tasks concerned only two tax issues, generalization to other tax issues is limited. Also, the use of intact groups raises the question of selection bias, threatening the external validity of the study, i.e., the interaction of selection and the

experimental intrusion. An intact group is a group of subjects who were not randomly chosen from the overall population. Due to resource constraints, subjects used in this research were accounting students completing individual tax courses in Steubenville, Ohio and Denton, Texas and people attending advanced tax training sessions for tax return preparers in Wheeling and Moundsville, West Virginia, and Martins Ferry and Steubenville, Ohio and tax training institute for tax preparers in Louisville, Kentucky. These subjects may not be representative of tax preparers as a whole, i.e., they may have developed better skills than tax preparers who do not attend continuing education seminars. Their skills may not have developed to the same extent as subjects who utilize other training programs. Since the subjects were not randomly drawn from their respective populations as a whole, generalizations are limited to the hypothetical populations that share the same characteristics of the subjects from the intact groups.

Implications and Suggestions for Further Research

The results of this research suggest that less specifically experienced tax preparers may not be aware when relevant information is missing. This could lead to suboptimal decision making. Tax preparers with lesser specific experience and their employers need to be aware of this cognitive weakness in order take steps to mitigate its effects. Steps might include detailed supervision of tax returns prepared by tax preparers who have had limited experience with the specific tax issues pertaining to those returns. Lesser specifically experienced tax preparers may benefit from the use

of detailed decision aids or other prompts to ensure that relevant information is not overlooked. Proper training, perhaps including case studies requiring tax returns to be prepared, might help lesser specifically experienced tax return preparers develop more highly structured mental models. Another implication of this research is that it is specific experience with a tax issue is beneficial, in addition to general experience as a tax return preparer. Firms may use this information to aid in employee development, possibly by assigning preparation of returns dealing with a specific tax issue to specific employees in order to develop specialists in certain tax issues. In the alternative, firms may monitor assignment of returns dealing with specific tax issues to see that all employees become well rounded and receive specific experience in a number of tax issues. It may be useful to have a record of specific experience by employee to gauge the appropriate amount of scrutiny and supervision required.

More research needs to be done regarding how tax preparers adjust to missing relevant information when they are aware that it is missing, the effects of their judgments when they are unaware of that relevant information is missing, and the factors that influence the recognition that relevant information is missing. The results of this study need to be replicated with other similar groups in other geographic locations. Additional research of this type needs to be done with tax preparers who do not attend these types of tax training seminars. Additional research is needed to determine how much specific experience in this tax issue is required before reliance

on decision aids is no longer necessary. Since this research is task specific, similar research is needed for other tax issues, as well.

APPENDIX A

TASK INSTRUMENTS

EXPERIMENTAL INSTRUCTIONS AND TASKS

Booklet One

Instructions:

This study examines tax preparer judgments. This research is being conducted by Judy Lewis of the Franciscan University of Steubenville. Your participation in this research is strictly voluntary. You may withdraw at any time without penalty, prejudice or loss of benefits. All results will be held strictly confidential. Do not write your name anywhere on this booklet. Your individual answers will not be disclosed. All results will be disclosed in aggregate summary form only. It should take approximately one-half hour to complete the questions. To receive a summary of the results, please write your name and address on the form I will make available to you when you turn in your booklet. If you do not wish to participate in this research, please return your booklet to me now. If you have questions about this, please contact Judy Lewis at (614) 283-6511.

In this experiment, you will be asked to give opinions and state your recommendations regarding several tax matters. Some of the questions are general in nature. Others are more detailed in nature. In order to refresh your memory regarding specific tax issues, overviews of the detailed tax issues are given. After reading the overviews, please turn in this booklet and receive Booklet Two. Booklet Two contains the questionnaires.

This study has been reviewed and approved by the UNT IRB Committee for the Protection of Human Subjects (817) 565-3940.

§ G:9.20 OVERVIEW

Deductibility of business expenses incurred in connection with dwelling unit used as taxpayer's residence is limited. Dwelling unit is taxpayer's residence if used for personal purposes for period exceeding 14 days or, if greater, 10 percent of number of days during year dwelling unit is rented at fair rental. Limited deduction is permitted for qualifying business and rental uses of dwelling unit. Deductions allocable to permitted activity are offset only against gross income from that activity.

Taxpayers generally are not allowed deductions with respect to dwelling units used as a residence by the taxpayer during the tax year, except for limited business and rental deductions. A dwelling unit includes a house, apartment, condominium, mobile home, or similar property providing living accommodations, as well as structures or other property appurtenant to a dwelling unit, but excludes portions of units used as a hotel, motel, inn, or similar establishment. The disallowance provisions, which apply to individuals, partnerships, trusts, estates, and S corporations, do not disallow any deduction allowable as an itemized deduction without regard to the taxpayer's trade or business or income-producing activity, such as for taxes, interest, or casualty losses. See § G:9.40.

Statutory exceptions to the disallowance rule permit a limited deduction for the following permitted business uses of a dwelling unit that is also used by the taxpayer as a residence:

(1) use as the principal place of business for any trade or business of the taxpayer;

(2) use as a place of business that is used by patients, clients, or customers in meeting or dealing with the taxpayer in the normal course of the taxpayer's trade or business;

(3) in the case of a separate structure that is not attached to the dwelling unit, use in connection with the taxpayer's trade or business;

(4) use as a storage unit for the taxpayer's inventory held for use in the taxpayer's trade or business of selling products at retail or wholesale; and

(5) use in providing licensed day-care services for children, individuals who have attained age 65, or individuals who are physically or mentally incapable of caring for themselves.

In general, these expenses must be allocable to a portion of the taxpayer's residence used exclusively and on a regular basis for the qualifying business activity. However, exclusive use is not required with respect to either day-care or storage use. Exclusive use by an employee also must be for the convenience of the taxpayer's employer. See § G:9.80.

§ A:7.20 OVERVIEW

Alimony and separate maintenance payments are taxable to payee-spouse and deductible by payer-spouse. Child support payments are not treated as alimony, and are not taxable to payee-spouse or deductible by payer-spouse. No gain or loss is recognized on transfers of property incident to divorce.

Transfers under a divorce or separation instrument fall into one of the following three categories:

(1) nontaxable property transfers;

(2) taxable alimony or separate maintenance payments; or

(3) nontaxable child support payments.

Qualifying alimony or separate maintenance payments are cash payments made under a divorce or separation instrument that does not require the continuation of payments, or provide for substituted payments after the death of the payee-spouse. They are income to the recipient-spouse and deductible by the payer-spouse in the year paid. See §§ A:7.80 and A:7.100.

Cash payments by the payer-spouse to a third party on behalf of the payee-spouse may qualify as alimony or separate maintenance payments if they are required by the divorce or separation instrument, and all other statutory requirements are satisfied. Payments to maintain property owned by the payer-spouse but used by the payee-spouse are not payments made on behalf of the payee-spouse even if they are made under the terms of the divorce or separation instrument. Cash payments to a third party on behalf of the payee-spouse also qualify if they are made at the payee's written request. See § A:7.120.

A divorce or separation instrument is a decree of divorce or separate maintenance or written instrument incident to the decree, a written separation agreement, or any other decree, such as a temporary support order, requiring payments for support or maintenance. See § A:7.140.

Amounts paid for child support are not qualifying alimony or separate maintenance payments. Child support payments are not includable in the income of the payee-spouse or deductible by the payer-spouse. Child support payments are payments under a divorce or separation instrument that are fixed or treated as fixed as support for the payer's children. See § A:7.200.

Transfers of property to spouses, whether by gift or sale or exchange, result in no gain or loss recognition. Transfers of property to former spouses also result in no gain or loss recognition if the transfer is made incident to divorce. In either case, the spouse receiving property takes a carryover basis. Transfers to third parties can qualify for nonrecognition in some circumstances. See § A:7.40.

The rules regarding alimony, child support, and property transfers were changed in 1984, with different rules generally applying to pre-1985 instruments and to property transfers before July 19, 1984. The pre-1985 rules and specific effective dates are discussed in § A:7.40 for property transfers and § A:7.60 for alimony. The special alimony rules applicable just to pre-1985 instruments, and with no current law counterpart, are covered in § A:7.180.

Booklet Two

Instructions:

This booklet is made up of four sections. Please read each section carefully and record your responses on this booklet. Please work carefully and at your own pace. Read and complete each section in order; do not return to a section once you have completed it. Thank you for your participation.

Demographic Questionnaire I - Experienced

Section I

This questionnaire is anonymous and confidential. The following items are not intended to identify you. Instead, they help us understand the responses.

1. Please indicate your Age:_____Years

2. Do you hold any professional certifications or licenses? Please check all that apply.
   _____C.P.A.
   _____Attorney
   _____Enrolled Agent
   _____Other -- please indicate_____

3. Please check all degrees attained and include your major field in the blank after the degree.

   _____Associate's (2-year degree)--major field_____
   _____Bachelor's--major field_____
   _____Master's--major field_____
   _____Law--degree_____

4. Please answer the following true/false questions about federal income tax by placing an "X" in the appropriate column beside each statement.

True	False	
____	____	All individual taxpayers must use Schedule A (Itemized Deductions) in filing their federal income tax returns.
____	____	If a taxpayer's federal income tax withholdings are greater than their federal income tax liability, they may choose to apply the difference to their next year's federal income tax liability.
____	____	Every individual 18 years and older must file an income tax return annually.
____	____	The deductibility of medical expenses by individual taxpayers is subject to a percentage of Adjusted Gross Income (AGI) limitation.
____	____	A married couple must file a joint income tax return.

Demographic Questionnaire I - Novice

Section I

This questionnaire is anonymous and confidential. The following items are not intended to identify you. Instead, they help us understand the responses.

1. Please indicate your Age:_____Years

2. What is your major?_____

3. Please check all degrees attained and include your major field in the blank after the degree.

_____Associate's (2-year degree)--major field_____
_____Bachelor's--major field_____

4. Please answer the following true/false questions about federal income tax by placing an "X" in the appropriate column beside each statement.

True False

____ ____ All individual taxpayers must use Schedule A (Itemized Deductions) in filing their federal income tax returns.

____ ____ If a taxpayer's federal income tax withholdings are greater than their federal income tax liability, they may choose to apply the difference to their next year's federal income tax liability.

____ ____ Every individual 18 years and older must file an income tax return annually.

____ ____ The deductibility of medical expenses by individual taxpayers is subject to a percentage of Adjusted Gross Income (AGI) limitation.

____ ____ A married couple must file a joint income tax return.

[Task One - Test of Hypothesis 1]

Section II

Please read the following items and consider how each would influence your recommendation whether or not a deduction for expenses of a home office should be taken. Please place an "E" beside items that would influence you to encourage deduction of expenses for a home office. Please place a "D" beside items that would influence you to discourage deduction of expenses for a home office. Please place "NE" beside items that would have no effect on your recommendation to the client, (i.e., items that are not relevant to your decision to encourage or discourage deduction of home office expenses). Please note that the stated facts are not intended to provide complete information on which to base a deduction decision. Rather, you are asked whether the underlined facts bode favorably (encourage), unfavorably (discourage), or should have no effect on the deductibility of home office expenses. Each item is to be considered independently.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

_____ The home office is used to meet clients.

_____ The home office is a room in a mobile home.

_____ The taxpayer hires a full-time employee to work out of his home office.

_____ The taxpayer, an adjunct professor, must share an office with five other professors which is unsuitable for his class preparation.

_____ The home office is used on an exclusive and regular basis to read financial reports and periodicals, clip bond coupons, and perform similar income-producing activities related to personal, long-term investments.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

_____ The home office is used to store inventory by a wholesaler who works solely out of his home.

_____ The office provided to the taxpayer, a teacher, by his employer is in a high-crime area, so he prefers to grade papers in his home office.

_____ The home office is used only occasionally.

_____ A doctor, who only treats patients at a hospital which does provide him office space, does all his billing and administrative work in his home office.

_____ The taxpayer, an employee, maintains an office in her home for the sole purpose of conducting interviews for her employer, whose closest office is 20 miles away.

_____ The business to which the home office relates is not the taxpayer's only source of income.

_____ The taxpayer uses his detached garage exclusively as a workshop in which to make and sell wooden lawn ornaments.

_____ The taxpayer keeps one room of his home exclusively as an office which he uses only when bad weather prohibits him from working at his place of business.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

_____The taxpayer, who both teaches and practices accounting, uses his office at school to meet with students and prepare for class. He uses his office at home exclusively to meet clients and prepare tax returns.

_____The taxpayer, a semi-retired doctor, used one room of his home solely as an examining room to see patients one day a week.

_____A self-employed outside salesperson, who has no other office, spends one day a week in his home office, which he uses exclusively to line up sales visits at the client's offices and to place orders with suppliers and to do administrative work associated with his business.

_____The taxpayer's home office is located in one corner of a large room in the taxpayer's home.

_____The taxpayer uses a room of his home to store inventory held for use in the taxpayer's business, even though he has space in the back room of his business which he could use to store the inventory.

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[No Missing Information Group]
[Experienced]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and were divorced in May, 1992. Their sons, Harry and Greg, were 12 and 14 at the time of the divorce. In the divorce decree, Charles was to pay Helen $4,000 per month from June, 1992, until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return.
Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below by circling the appropriate number.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____
_____
_____
_____
_____

What is your perception of the realism of the preceding scenario?
_____Very realistic
_____Realistic
_____Unrealistic
_____Very unrealistic

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[Missing Information/Prompt Group]
[Experienced]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and divorced in May, 1992. You are unaware if Helen and Charles have children. In the divorce decree, Charles was to pay Helen $4,000 per month from June, 1992, until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return. Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below by circling the appropriate number.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____
_____
_____
_____
_____

What is your perception of the realism of the preceding scenario?
_____Very realistic
_____Realistic
_____Unrealistic
_____Very unrealistic

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[Missing Information/No Prompt Group]
[Experienced]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and divorced in May, 1992. In the divorce decree, Charles was to pay Helen $4,000 per month until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return.
Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____
_____
_____
_____
_____

What is your perception of the realism of the preceding scenario?
_____Very realistic
_____Realistic
_____Unrealistic
_____Very unrealistic

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[No Missing Information Group]
[Novice]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and were divorced in May, 1992. Their sons, Harry and Greg, were 12 and 14 at the time of the divorce. In the divorce decree, Charles was to pay Helen $4,000 per month from June, 1992, until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return. Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below by circling the appropriate number.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____

_____

_____

_____

_____

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[Missing Information/Prompt Group]
[Novice]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and divorced in May, 1992. You are unaware if Helen and Charles have children. In the divorce decree, Charles was to pay Helen $4,000 per month from June, 1992, until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return.
Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below by circling the appropriate number.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____

_____

_____

_____

_____

[TASK TWO - Test of Hypothesis $_2$ and Hypothesis$_3$]
[Missing Information/No Prompt Group]
[Novice]

Section III

Please read the following description and make a determination whether or not you would encourage the client to take a $48,000 deduction for payments made.

Helen and Charles separated and divorced in May, 1992. In the divorce decree, Charles was to pay Helen $4,000 per month from June, 1992, until May, 1996, at which time the payments were to decrease to $3,000 per month. In May, 1998, payments are to decrease again to $2,000 per month. The payments are to continue until Helen's death. Charles paid $48,000 in cash payments in 1995 to Helen. The federal tax consequences of the payments were not addressed in the divorce decree.

Charles has asked you to prepare his 1995 individual income tax return.
Based on the above information, please determine whether you would recommend or discourage that Charles deduct the entire $48,000 on his 1995 individual income tax return. Please record the strength of your recommendation on the scale given below by circling the appropriate number.

Strongly					Uncertain					Strongly
Discourage	-4	-3	-2	-1	0	+1	+2	+3	+4	Recommend
Deduction										Deduction

In this case, did you have sufficient information to make a decision?

_____Yes, I had sufficient information with which to make a decision.

_____No. I needed more information, including (please specify):

_____

_____

_____

_____

_____

[Demographic Questionnaire II - Experienced]

Section IV

This questionnaire is anonymous and confidential. The following items are not intended to identify you. Instead, they help us understand the responses..

1. How many tax seasons have you worked preparing individual income tax returns? _____

2. Approximately how many times have you encountered the issue of home office deduction in practice?

   ____0 _____1-2 _____3-5 _____6-10 _____Over 10 times

3. Approximately how many times have you encountered the issue of deductibility of alimony or child support payments in practice?

   ____0 _____1-2 _____3-5 _____6-10 _____Over 10 times

4. How interesting did you find this questionnaire?
   _____Very interesting
   _____Somewhat interesting
   _____Somewhat uninteresting
   _____Very uninteresting

When you have completed this Booklet, please place it in the envelope and turn the envelope in.

[Demographic Questionnaire II - Novice]

Section IV

This questionnaire is anonymous and confidential. The following items are not intended to identify you. Instead, they help us understand the responses.

1. Have you ever prepared individual income tax returns for a fee? _____Yes _____No

1a. If yes, how many tax seasons have you prepared individual income tax returns?_____

2. Do you think your career will include being an individual tax return preparer?
_____Yes _____No

3. Did you study the subject of home office deduction in a tax course?____Yes____No

4. Did you study the deductibility of alimony and child support payments in a tax course?

_____Yes _____No

5. How interesting did you find this questionnaire?
_____Very interesting
_____Somewhat interesting
_____Somewhat uninteresting
_____Very uninteresting

When you have completed this Booklet, please place it in the envelope and turn the envelope in.

APPENDIX B

KEY TO TASK ONE

Appendix B
Key to Task One (Section II)

Section II

Please read the following items and consider how each would influence your recommendation whether or not a deduction for expenses of a home office should be taken. Please place an "E" beside items that would influence you to encourage deduction of expenses for a home office. Please place a "D" beside items that would influence you to discourage deduction of expenses for a home office. Please place "NE" beside items that would have no effect on your recommendation to the client, (i.e., items that are not relevant to your decision to encourage or discourage deduction of home office expenses). Please note that the stated facts are not intended to provide complete information on which to base a deduction decision. Rather, you are asked whether the underlined facts bode favorably (encourage), unfavorably (discourage), or should have no effect on the deductibility of home office expenses. Each item is to be considered independently.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

_E___The home office is used to meet clients.

_NE_The home office is a room in a mobile home.

_NE_The taxpayer hires a full-time employee to work out of his homeoffice.

_D__The taxpayer, an adjunct professor, must share an office with five other professors which is unsuitable for his class preparation.

_D__The home office is used on an exclusive and regular basis to read financial reports and periodicals, clip bond coupons, and perform similar income-producing activities related to personal, long-term investments.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

_E___The home office is used to store inventory by a wholesaler who works solely out of his home.

_D__ The office provided to the taxpayer, a teacher, by his employer is in a high-crime area, so he prefers to grade papers in his home office.

_D__The home office is used only occasionally.

_D__A doctor, who only treats patients at a hospital which does provide him office space, does all his billing and administrative work in his home office.

_E__The taxpayer, an employee, maintains an office in her home for the sole purpose of conducting interviews for her employer, whose closest office is 120 miles away.

_NE_The business to which the home office relates is not the taxpayer's only source of income.

_E__The taxpayer uses his detached garage exclusively as a workshop in which to make and sell wooden lawn ornaments.

_D_The taxpayer keeps one room of his home exclusively as an office which he uses only when bad weather prohibits him from working at his place of business.

E = Encourage deduction
D = Discourage deduction
NE = No effect on decision; not relevant.

__E__ The taxpayer, who both teaches and practices accounting, uses his office at school to meet with students and prepare for class. He uses his office at home exclusively to meet clients and prepare tax returns.

__E__ The taxpayer, a semi-retired doctor, used one room of his home solely as an examining room to see patients one day a week.

__D_ A self-employed outside salesperson, who has no other office, spends one day a week in his home office, which he uses exclusively to line up sales visits at the client's offices and to place orders with suppliers and to do administrative work associated with his business.

_NE_ The taxpayer's home office is located in one corner of a large room in the taxpayer's home.

__D_ The taxpayer uses a room of his home to store inventory held for use in the taxpayer's business, even though he has space in the back room of his business which he could use to store the inventory.

APPENDIX C

ADDITIONAL INFORMATION REQUESTED

BY SUBJECTS REGARDING TASK II

Additional Information Requested By Subject Regarding Task II

Subjects were asked if they did not have sufficient information, to please specify what other information was needed. The responses given, categorized by experimental condition, were as follows:

Sufficient Information - Condition 1 - No missing information

was part of payment specified for child support
alimony paid $ amount
was any amount named as child support? Any as alimony?
a pub. 17 and the publication on divorce and separated individuals
spouse income, what payment was used for, what Charles said payment was for
Charles' income
need to determine amount of child support
was part of this considered alimony or child support
whether it is child support or alimony; why the decrease to $3000
if any of the amount was child support, if so, which part
need to reread recheck regs to be certain
seems some could be child support; maybe $2000 could be deducted as alimony
needed the contract
I would look up exact wording for deduction for alimony
child support or alimony - maintenance?
(no comment)
(no comment)
I would research before recommending.
more complete wording; some may have been child support
need to know whether payments will be for alimony or child support - Payment decreased when each child turned 18. Probably $2,000 maintenance and $200 child support.
Specific duties of payments and of copy of the divorce decree

Sufficiency of Information - Condition 2 - Missing Information/Prompt Group

children involved? Was it court ordered?
I would want to know if the court considered the payments strictly as alimony
whether they did have children and a copy of the divorce decree to check if money is specified to alimony or child support

spouse treatment of payment s/b consistent although I think the payments would be considered alimony provided there are no children that would be child support
is any of the $48,000 for child support
copy of divorce decree; however, if individual's income was substantial, probably would accept figures; copy of last year's tax return
did he have children? How did the divorce decree state what the payments are for?
whether divorce decree addresses division of marital property and to what extent. Whether there are children and their ages. If there are children who turn 18 in the years that the "alimony" decreases, there may be a question as to if a portion of such alimony is actually child support additional court proceedings; based response on information given. was part of the payment for child support? Why were the payments decreasing from year to year
need to know what determined the decreases in payment. Without additional information one would suspect that child support is included. The definition of alimony states that the amount is set (normally) until remarriage or death occurs.
(no comment)
(no comment)
whether it is child support
Does some go to child support?
If there were any children and specifics of settlement in regard to payments and child support

Sufficiency of Information - Condition 3 - Missing Information/No Prompt

any children for which child support be attributed; any property settlement involved; what had been done with the payments in previous years
I assume the payments were to the wife only!
was this alimony
his income
any part of payment alimony, child support, or for buyout of jointly owned property
the divorce decree didn't state what the payments were for. They could have been incident to the division of assets at divorce.
nature of payments
I would want to know the reason for the reduction from year one to year three.
was this alimony - I assumed so, not child support.
Five subjects gave no comment.

WORKS CITED

Abelson, R. 1976. Script processing in attitude formation and decision making. In: J.S. Carroll and J.W. Payne (eds.), *Cognition and social behavior*. Hillsdale, N. J.: Erlbaum.

Adelson, B. 1984. When novices surpass experts: the difficulty of a task may increase with expertise. *Journal of Experimental Psychology: Learning, Memory and Cognition.* 10: 483-495.

Agostinelli, G., S. Sherman, R. Fazio and E. Hearst. 1986. Detecting and identifying change: additions vs. deletions. *Journal of Experimental Psychology: Human Perception and Performance* 12: 445-454.

Alba, J. and J. Hutchinson, 1987. Dimensions of Consumer Expertise. *Journal of Consumer Research.* 13: 411-453.

Anderson, N. 1981. *Foundations of information integration theory.* New York: Academic Press.

Anderson, N. 1982. *Methods of information integration theory.* New York: Academic Press.

Anderson, J. 1983. *The architecture of cognition.* Cambridge, MA: Harvard Univ. Press.

Bonner, S. 1990. Experience Effects in Auditing: The Role of Task-Specific Knowledge. *Accounting Review* 65: 72-92.

Chase, W. and H. Simon. 1973. Perception in chess. *Cognitive Psychology* 4: 55-81.

Cheng, P., K. Holyoak, R. Nisbett & L. Oliver, 1986. Pragmatic versus syntactic approaches to training deductive reasoning. In *Reasoning, abstraction, and the prejudices of 20th century psychology*, R.E. Nisbett, ed., Lawrence Erlbaum Associates, Inc., Hillsdale, N.J., 1993.

Chi, M., P. Feltovich and R. Glaser. 1981. Categorization and representation of physics problems by experts and novices. *Cognitive Science.* 5: 121-152.

Commerce Clearing House, 1994. *CCH Federal Tax Service* (previously *Bender's Federal Tax Service).* New York: Commerce Clearing House, Inc.

Fazio, R., S. Sherman and P. Herr. 1982. The feature-positive effect in the self-perception process: does not doing matter as much as doing? *Journal of Personality and Social Psychology.* 42: 404-411.

Fiske, S., D. Kinder, and W. Larter. 1983. The novice and the expert: knowledge-based strategies in political cognition. *Journal of Experimental Social Psychology* 19: 381-400.

Gardner, J., S. Willey, and J. Woehlke. 1991. The realistic possibility standard: the AICPA, ABA and IRS offer guidance on ethical responsibilities in tax practice. *The Tax Adviser.* (May): 279-287.

Holland, J., K. Holyoak, R. Nisbett and P. Thagard, 1986. *Induction: processes of of inferences, learning and discovery.* Cambridge, MA: MIT Press.

Internal Revenue Service, 1988. *Internal Revenue Code, Income, Employment, Estate and Gift Tax Provisions As Of June 23, 1988,* Chicago, Illinois: Commerce Clearing House, Inc.

Internal Revenue Service, Selected Statistical Series (Winter 1987-1988). *Statistics of Income Bulletin,* 100.

Internal Revenue Service Research Division, ICPSR 8884, 1988. *Survey of Tax Practitioners and Advisers, 1986: [United States],* U.S. Department of the Treasury, Inter-university Consortium for Political and Social Research, Ann Arbor, Michigan.

Jaccard, J. and G. Wood. 1988. The effects of incomplete information on the formation of attitudes toward behavioral alternatives. *Journal of Personality and Social Psychology.* 54: 580-591.

Johnson, R. and I. Levin. 1985. More than meets the eye: the effects of missing information on purchase evaluations. *Journal of Consumer Research.* 12: 169-177.

Johnson, E. and J. Russo. 1984. Product familiarity and learning new information. *Journal of Consumer Research.* 11: 542-550.

Kaplan, S., P. Reckers, S.West and J. Boyd. 1988. An examination of tax reporting recommendations of professional tax preparers. *Journal of Economic Psychology* 9: 427-443.

Kramer, J. And L. Phillips, editors. 1994. *Prentice Hall's Federal Taxation, 1995, Comprehensive Volume*, Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 6-16.

LaRue, D. and P. Reckers. 1989. An empirical examination of the influence of selected factors on professional tax preparers' decision processes. *Advances in Accounting* 7: 37-50.

Long, J. and S. Caudill. 1987. The usage and benefits of paid tax return preparation. *National Tax Journal* (March): 35-46.

Lowe, D., P. Reckers and R. Wyndelts. 1993. An examination of tax professionals' judgments: the role of experience, client condition and reciprocal obligation. *Journal of Business and Psychology* 7 (Spring):341-357.

Marchant, G., J. Robinson, U. Anderson, and M. Schadewald, 1989. A cognitive model of tax problem solving. *Advances in Taxation* 2: 1-20.

Meyer, R. 1981. A model of multiattribute judgments under attribute uncertainty and informational constraint. *Journal of Marketing Research.* 18: 425-441.

Sanbonmatsu, D., F. Kardes and P. Herr. 1992. The role of prior knowledge and missing information in multiattribute evaluation. *Organizational Behavior and Human Decision Processes* 51: 76-91.

Slovic, P. and D. MacPhillamy. 1974. Dimensional commensurability and cue utilization in comparative judgment. *Organizational Behavior and Human Performance.* 11: 172-194.

Spilker, B.. 1995. The effects of time pressure and knowledge on key word selection behavior in tax research. *The Accounting Review.* 70 (No. 1): 49-70.

Yates, J., C. Jagacinski, and M. Faber. 1978. Evaluation of partially described multiattribute options. *Organizational Behavior and Human Performance.* 21: 240-251.