

DO EXPERT SYSTEMS IMPACT TAXPAYER BEHAVIOR?

A Dissertation

by

STEVEN J. OLSHEWSKY

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2003

Major Subject: Accounting

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ABSTRACT

Do Expert Systems Impact Taxpayer Behavior? (December 2003)

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Individuals are increasingly using expert system tax programs as a substitute for paid professionals when preparing their income tax returns. This study examines ways that expert systems encourage the same aggressive results documented when paid professionals are used. Examining the use of expert systems and the related behavior of taxpayers reveals aggressive reporting related to the commonly used warning alerts in tax programs. Using an experimental economics setting in which participants report liabilities with the possibility of penalties for noncompliant reporting, participants filled out a Claim Form mimicking a Schedule C in one of four conditions: manual preparation, no alerts, alerts triggered at a high threshold of reporting aggression, and alerts triggered at a low level of reporting aggression. Comparing the amounts deducted in each condition revealed that warning alerts with low thresholds of activation decreased aggressive reporting while warning alerts with high thresholds of activation increased aggressive reporting. Survey instruments measuring user satisfaction indicated significantly lower satisfaction when (high or low level) warning alerts were

used versus no warning alerts. Contrary to expectations, respondents using the expert system tax program with high threshold warning alerts compared to no warning alerts reported a significantly higher perception of accuracy. This study demonstrates the extreme to which taxpayers are swayed by perceived aspects of the tax software that are irrelevant to the facts of their tax situations. Exactly what taxpayers need to be given by way of guidance and direction to comport their behavior to the tax laws is a critical question of public policy.

DEDICATION

This dissertation is dedicated to all those who prayed for me, in whatever form they found correct (according to their own religious, moral or personal beliefs).

That is too great a host to list here, and attempting to name so large a number could delay the publication of this dissertation.

By way of example, I will mention my mother who has a history of accomplishing great things through prayer. While in the Ph.D. program, my mother survived the death of her husband and 102 year-old mother. Also, my mother turned away from most worldly interests, preferring to spend her time exclusively studying the Bible as the only thing she found truly interesting.

It is my belief that faith accomplishes much. Faith seems to guide and sustain even apart from, and often in contradiction to, things known. Faith then being a separate thing than knowledge, one must wonder how faith can be learned.

Faith seems to be gained, through means that remain mysterious, during childhood. A child's earliest years reveal the planting of the seeds of faith, the nurturing support and early growth of faith. So it might well be speculated that faith is imparted by the same caregiver that raises the child from infancy.

A loving mother was my best teacher. While the last page of this dissertation recounts my formal education and personal accomplishments, nothing gave me strength, compassion, hope or faith as these were already fully established for me by my mother. In the joys & travails of this Ph.D. program, my mother's prayers helped me the most.

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I. INTRODUCTION

Tax return preparation programs are readily available in the commercial market and are widely used by the public. Past studies have shown that when taxpayers use professional tax return preparers, the tax returns are less compliant, *i.e.*, more aggressive (see Schmidt, 2001 for a summary). The substitution of computerized individual income tax preparation systems (tax programs) for paid professionals raises questions about whether tax programs encourage the same aggressiveness as paid professionals. This study addresses whether tax programs and their warning alerts influence taxpayer reporting and satisfaction and whether tax programs can be a preferable substitute to paid professionals.

The literature suggests that taxpayers have traditionally sought help from professional tax preparers primarily to help limit their aggression and give them confidence in the accuracy of their tax returns (Tan, 1999). Sellers of tax programs, such as TurboTax, recognize that taxpayers seek the same help from tax programs as from professional tax preparers and this is evidenced by promotional press releases claiming tax software makes tax preparation more accurate, that users find returns easier to do and that users are more satisfied with their tax returns (Intuit.com, 2002). This claim of expertise by vendors is strengthened by tax programs offering technical information about the tax laws and audit diagnostics in the form of warning alerts that pop up to offer instruction or guidance about specific tax return lines. Intuit, Inc.

reinforced this impression of guaranteeing accuracy with an optional \$25 warranty coverage against Internal Revenue Service (IRS) challenge.

If tax programs are sought, and in fact serve, as a surrogate for professionals, then the problems documented when using professionals could be discoverable when using tax programs. Taxpayers may tend to over rely on tax programs, becoming more aggressive as they do using paid professionals, because of the potential for technology dominance (Arnold & Sutton, 1998). Another reason tax programs might increase aggression is the unlimited opportunity to seek increased economic benefit by manipulating the results with relatively costless data input iterations.

Because tax programs support the decision making process (Davis & Brozovsky, 1995), they are expert systems whose effect on judgment and decision-making is discoverable. Expert systems have been extensively studied in many areas of accounting, especially auditing, and decisions aids have been used to investigate the behavior of professional tax researchers (Cloyd, 1997; Smith & McDuffie, 1996; Brown & Wensley, 1995). This study looks at the use of expert systems by the taxpayers themselves and the related behavior of those taxpayers.

This study seeks to discover the effect of tax programs upon tax reporting and to discover the related effects of commonly used warning alerts employed by these programs using an experimental economics setting in which participants report deductions/credits with the possibility of penalties for overly aggressive reporting. Participants in the experiment filled out a Claim Form mimicking a Schedule C in one of four conditions: manual, no alerts, alerts triggered at a high threshold of reporting

aggression, and alerts triggered at a low level of reporting aggression. Data comparisons between these conditions examined the relative effect of using a tax program and the exacerbating or palliating effect of warning alerts with high or low thresholds of activation. Follow-up survey instruments determined the satisfaction levels reported in each context and provided risk preferences and demographic factors of each participant to rule out these possibly confounding factors.

Participants using tax programs were expected to report more aggressively than those using manual systems. Warning alerts triggered by the lowest level of aggressive reporting were expected to palliate the tax program effect, causing participants to report more conservatively. Warning alerts triggered only at the highest level of noncompliant reporting are expected to exacerbate the over reliance of participants on the tax programs, thereby causing more aggressive reporting.

The results provide evidence of ways that tax programs with different types of warning alerts might contribute to noncompliance through encouraging more aggressive reporting. How these warning alerts can be modified to improve reporting accuracy is useful information from a public policy standpoint as well as the practical aspect of improving customer satisfaction with tax programs. This study serves the interests of consumers, sellers and regulatory agencies by expanding the research about how features of an expert system affect taxpayer behavior.

The market for tax programs is large and fast growing with the readily available technology and ease of use inviting the average taxpayer to employ a computer system instead of a paid professional (Hicks & Rubenstein, 1996). Intuit, Inc. alone claimed

over 14 million taxpayers used its product in 2001 (Intuit.com, 2002). Tax software is being manufactured by at least 35 different software companies attempting to meet the public demand for tax programs, suggesting that this market trend is expected to continue (Zarowin, 1999).

This level of consumer interest suggests a need for investigation of the role that tax programs might play in aggressive reporting. Discovering the effect that tax programs might have on aggressive reporting, and taxpayer compliance in extreme cases, is important to tax program manufacturers who currently claim that their products increase accuracy. Because these claims of increased accuracy could be misleading or untrue, it is in the public interest for users to know of any potential for increased penalties resulting from the possible effects of using tax programs. The IRS could identify returns done with tax programs and adjust their audit protocols to match any increased risk levels of lower compliance when using a tax program. Additionally, this research extends the expert decision aid literature to the tax setting and broadens the behavioral research on the subject of taxpayers using a form of paid preparation.

The following section presents the hypotheses and their motivation based on a review of related literature. A methodology section describes the participants, instruments and procedures of the experiment. Results are analyzed in section four. Conclusions and limitations are discussed in the fifth section.

II. MOTIVATION & HYPOTHESES DEVELOPMENT

Background

Voluntary tax compliance is reported by the IRS to be around 82%, leaving almost one in five tax returns filed with some degree of noncompliance (Christen and Hite, 1997). The amount of underreported federal income taxes –the tax gap related to noncompliance— was estimated to be growing at over ten percent per year between 1973 and 1987 to over \$100 billion (IRS, 1990). Without including the underreporting of organizations or illegal income, the 1986 taxes unpaid because of individuals' inaccurate reporting practices approximated 20 percent of all federal income and 40 percent of the federal deficit for the same year (Roth, 1989). Noncompliance is a significant fact of tax accounting and has an economic impact justifying the investigation of factors contributing to taxpayer reporting failures such as the aggressiveness that an expert system might encourage.

The question of noncompliance comes up naturally as the result of aggressive reporting by taxpayers as extreme cases of aggression can cause deviation from the tax laws, and so aggression is considered the primary factor contributing to noncompliance throughout this paper. Aggression can be influenced by several factors that are independent of a taxpayer's deliberate intention to misreport their tax position, with behavioral models typically failing to account for unintentional reporting deviations (Erard, 1997). Past studies have shown taxpayers are more interested in conservative reporting and seek safety from the possibility of government audit much more than the commonly assumed desire to simply minimize tax liability (Hite and McGill, 1992).

Showing whether and how tax programs contribute to aggressive tax reporting, and the role of expert system features such as warning alerts in exacerbating or palliating the aggression of taxpayer reporting, is important to taxpayers whose interests might otherwise not be served.

Taxpayers have been shown to over-rely on professional tax preparers, accepting suggested reporting guidelines as correct (Kaplan *et al.*, 1988). Using an expert system instead of a human expert raises the question of whether taxpayers can still be expected to defer to expertise greater than their own especially when employing computerized help in a technical area like tax. The theory of technology dominance predicts that when a taxpayer generally lacking expertise in tax uses an intelligent decision aid such as a tax program, the tax program will take primary control of the decision-making process (Arnold & Sutton, 1998). Discovering the degree to which marketing claims of improved accuracy may be safely relied upon is important to taxpayers who need to rely on tax programs for unbiased reporting assistance.

Past research into taxpayer aggression has focused either on economic factors directly influencing the payoff and penalty structure of the tax system or on the interactive role of the taxpayer and the professional tax preparer (Smith and Kinsey, 1986). Professional tax preparers (CPAs and attorneys) assisted in the filing of about 44% of all tax returns in 1979, and these returns accounted for 74% of the noncompliance that year (Klepper and Nagin, 1989a). Other studies have consistently verified that a higher magnitude of noncompliance exists when returns are professionally prepared versus when they are self-prepared without aid (Erard, 1993).

Taxpayers have been shown to be much more acceptant of aggressive advice when they receive it from a CPA helping them prepare their taxes (Schmidt, 2001). Taxpayers move much further from their naturally conservative reporting tendencies when using a professional preparer to navigate gray areas of the tax law (Christen & Hite, 1997). This tendency of taxpayers to become aggressive in the presence of expert advice from a professional is so extreme that tax preparers report an awareness of the phenomenon with their clients notwithstanding clients' reports that their true preferences are for conservative reporting (Duncan *et al.*, 1989; Milliron, 1988; IRS, 1987). This observed disconnect between taxpayer attitudes and behavior is well documented when the expert is a professional, but has not been explored in the environment of an expert system.

Tax Programs vs. Manual Preparation

Tax is the fastest changing area of the law and taxpayers are generally unable to keep up with the latest tax laws. Following the most radical tax overhaul since 1958, the Tax Reform Act of 1986, the primary transmission mechanism used by taxpayers to become aware of the new tax deductibility rules in 1987 was found to be the use of a tax professional (Hrung, 2001). Whereas individual taxpayers have traditionally relied on tax preparation professionals (*i.e.*, CPAs and attorneys) for guidance in complying with tax laws, a large and growing number of taxpayers are turning to tax preparation software for this guidance (Hicks & Rubenstein, 1996). This study tests the assumption that tax programs, in substituting for paid professionals as experts, facilitate the same aggressive reporting behavior as do paid preparers.

Decision aids often change the communication of information that conveys risk cues and thereby change judgments about risk (Dilla & Stone, 1997). Psychological theory suggests that relatively uninformed taxpayers using information systems will become overconfident and thus act aggressively as a result of the decision aid's influence (Griffin & Tversky, 1992). In response to the AICPA's invited comment about possible disservice to individual investors, an economic experiment found that less informed investors using information systems suffered a confidence bias and became overly aggressive thereby losing money in a trading game setting (Bloomfield *et al.*, 1999).

The typical decision making strategy of considering a similar past situation, comparing it to the one at hand and then making small adjustments in fitting the previous decision to the current situation leads to poor performance where personal experience is lacking and this encourages heavier reliance on decision support systems (Hoch & Schkade, 1996). Any computer system can be found to cause increased confidence if used as an expert system through a phenomenon called technology dominance (Arnold & Sutton, 1998). Where a taxpayer uses a tax program as a substitute for a paid professional, they are accepting the tax program as an aid and tool, but also as a source of expertise upon which they can become over-reliant. This would result in an increased confidence and surrender to technology dominance allowing the taxpayer to become more aggressive, and thereby possibly move into lower levels of compliance without realizing it. The following hypothesis (stated in the alternative) tests this proposition:

H₁: Participants using tax programs without warning alerts will have higher deduction claims than participants using manual systems (*i.e.*, there is a tendency by taxpayers toward aggressive reporting through over-reliance on a computerized system presumed to have expertise).

Warning Alerts

A long series of studies has investigated the environment of taxpayers interacting with tax practitioners and how noncompliance by aggressive reporting is increased or decreased in different ways within that environment (LaRue and Reckers, 1989). On the one hand, professionals play the role of enforcing the tax laws by explaining the tax code in a way that advises clients of strict limits that must be complied with (Pei *et al.*, 1992). On the other hand, professionals interpret the grey areas of the tax code so that clients are allowed to report more aggressively while still believing they are complying with the law (Kaplan *et al.*, 1988).

This dual role of the professional is explained by the duality of contexts in which tax issues can be presented. Well-settled issues evoke professional advice that avoids any attempt to contravene the clear-cut letter of the law, while dealing with gray area issues can evoke milder cautions against penalty and allow more aggressive tax positions to develop (Klepper *et al.*, 1989). Even though paid preparers assist in the enforcement of unambiguous tax laws, professional advice in areas of ambiguous tax law has been shown to increase taxpayer noncompliance (Tan, 1999). As such, not only do tax preparation aids warrant investigation, but the degree to which those aids present the

ambiguity of the tax rules to the taxpayer is an important issue in understanding how computer programs can tend to influence compliance.

Warning Alerts Triggered at Low Thresholds

Compliance is a goal whose achievement is usually sought through various measures creating fear in the mind of the taxpayer such as the threat that aggressive reporting will cause an increased probability of being audited (Forrest & Sheffrin, 2002). The role of the so-called independent preparer as policing the taxpayer is tacitly assumed (Developments in the Law, 1994; Reinganum & Wilde, 1991). In Italy, as an example of the enforcement role sought of professionals, CPAs have been given formally recognized gatekeeper duties and set a “conformity seal” upon tax returns (Franzoni, 1998).

Clients predominantly want professional tax preparers to assume a law enforcement role (Hite and McGill, 1992). The preference for professionals to err on the most conservative side of paying all possibly required taxes is shared by 70% of taxpayers in contrast to only 25% of taxpayers who seek professional help for the purposes of reducing their tax liability (Collins *et al.*, 1990). Taxpayers seeking the aid of tax programs are assumed to share the motives of those seeking the aid of a paid professional. All taxpayers are thus considered to be primarily interested in guidance and direction toward the ends of strict compliance and to be predisposed towards avoiding aggressive reporting.

If a tax program gives clear compliance guidelines that are triggered at a low threshold of deviation from the most conservative reporting position, taxpayers will be

encouraged to report in strict compliance even though a tax matter may qualify as a gray area issue. Taxpayers, already motivated by strict compliance, are thus empowered to avoid aggressive reporting. This concept is expressed in the second testable hypothesis (stated in the alternative):

H₂: Participants using tax programs with low threshold alerts will have lower deduction claims than participants using tax programs with no alerts (*i.e.*, there is a tendency by taxpayers to conform to warning alerts triggered by anything less than the most conservative reporting).

Warning Alerts Triggered at High Thresholds

A study of Australian government tax agents revealed that their most perceived ethical criticism of tax practitioners is their failure to inquire fully in cases where client information or documentation is inaccurate or incomplete (Marshall *et al.*, 1998).

Generally accepted in the accounting literature is that tax professionals reduce uncertainty in the minds of taxpayers about how transactions should be reflected in a tax return, yet prior psychological research suggests that a confirmation bias may prevent taxpayers from questioning the information they report in the presence of expert guidance (Cloyd & Spilker, 1999). Analytical models describe a principle-agent relationship in which the taxpayer relies on the tax expert to resolve tax law uncertainty and that noncompliance is a function of how fully ambiguities are eliminated (Phillips & Sansing, 1998). Where taxpayers expect some guidance or even policing to avoid noncompliance but receive less than the direction sought in that regard, they may tend

aggressively toward noncompliance thinking they are in the safety of a more conservative reporting or within the bounds of a gray area.

Taxpayers using a tax program that provides warning alerts, but only triggered at the highest level of aggressive reporting, could report aggressively while thinking they are being more conservative than they actually are. Over-reliance on the warning alert feature as a gatekeeper will skew taxpayers' appreciation of the true boundaries. When a taxpayer is aware of the presence of warning alerts and expects that the tax program will prevent aggressive reporting, then any reporting up to the level of triggering of the warning alert might be assumed to be at a conservative level even though it may actually be an aggressive reporting. This is expressed in the third testable hypothesis (stated in the alternative):

H₃: Participants using tax programs with high threshold alerts will have higher deduction claims than participants using tax programs without alerts (*i.e.*, there is a tendency by taxpayers to report aggressively with warning alerts triggered only at the highest levels of aggressive reporting).

Taxpayer Satisfaction

Because dissatisfaction can lower user acceptance, user satisfaction can play a key role in the success of any computerized system (Monnickendam, 2003). User satisfaction is the most commonly used variable of interest when researching the success of an information system (DeLone & McLean, 2003). Manufacturer claims of increased

taxpayer satisfaction suggest testing for user satisfaction in addition to system influences on reporting.

Conservative tax reporting becomes an even higher priority when taxpayers feel their tax knowledge is increased (Eriksen & Fallen, 1996). A person's assessment of their knowledge about any subject is affected by their confidence in that knowledge (Renner & Renner, 2001). Confidence in the accuracy of a system is a component factor of user satisfaction as measured by the end-user computing satisfaction (EUCS) instrument (Doll & Torsadeh, 1988).

Self-assessed confidence in accuracy was overestimated, although not correlated with accuracy in a study of financial decision making with a computerized support system (Lawrence & Sim, 1999). The prevalent marketing claims of increased customer satisfaction with tax programs calls into question the source of that satisfaction relative to possibly inflated self-assessments of conservative reporting. EUCS tests the success of a computer system based on two components of user satisfaction: ease of use and information content (McHaney *et al.*, 1999).

Increased satisfaction can be expected with tax programs due to the increased ease of use and the perceived increase of information provided by an expert system. However, as warning alerts make tax programs more complex, the systems may seem less "friendly" and thus more cumbersome while bolstering confidence through an increased perception of expertise. These relative perceptions of satisfaction will be tested with the following hypotheses (stated in the alternative):

H_{4a}: Participants using tax programs with warning alerts will report higher “information content” satisfaction than participants using tax programs without alerts (*i.e.*, there is a higher assumption of expertise by taxpayers with warning alerts used in tax programs).

H_{4b}: Participants using tax programs with warning alerts will report lower “ease of use” satisfaction than participants using tax programs without alerts (*i.e.*, taxpayers will regard warning alerts as a complicating feature).

Recapitulation

These four hypotheses test the tax program manufacturers claims of increased accuracy and satisfaction. Accuracy is the primary measure of success as taxpayers have been found to be more interested in conservative reporting and safety from the possibility of government audit than the commonly assumed desire to simply minimize tax liability (Hite and McGill, 1992). User satisfaction is the most common measure of success with computerized systems generally (Delone & McLean, 1992).

User satisfaction is tested because the relationship between user satisfaction and performance has been found significant (Gelderman, 1998). Tax programs are expert systems that support the decision making process by bringing additional knowledge to taxpayer environments (Davis & Brozovsky, 1995). As such, taxpayers are assumed to seek out the aid of a tax program for many of the same reasons that they would a tax professional. Because tax professionals have been shown to introduce biases affecting aggressive reporting levels, the similar effects of tax programs are tested for in this study.

III. METHODOLOGY

Overview

Participants were introduced to a hypothetical circumstance in which they are assumed to have earned some money in a home based business for which they are given receipts and other documentation. They are thus endowed with some earnings, but are also charged with related expenses against which they needed to apply credits (as though deductions) to make a claim for payment (as though a refund) of withheld earnings. In this way, an experimental economics setting was created which mimics the income tax return preparation scenario.

Participants were provided with background information (Appendix A), June financial records and line-by-line instructions (Appendix B) along with a completed example Claim Form for the month of June (Appendix C) showing the comparison between a “minimum” and “maximum” reporting strategy. June’s information was used as a tutorial to teach participants how to complete the Claim Form. The process was described using an experimenter script (Appendix G) and discussed until everyone in the experimental group understood the basic task.

A set of July financial information (Appendix D) was used to manually complete a blank Claim Form as a practice set. The results of the practice set were reviewed with participants. When everyone in the experimental group understood how to complete the task manually, an August Claim Form (Appendix E) and set of August information (Appendix F) was provided as the experimental task for participants to complete.

Participants in the experiment were randomly assigned to perform substantially the same task in one of four settings: manual preparation (no computer), computer program assisted with no warning alerts, computer assisted with warning alerts triggered by the slightest deviance from the most conservative possible input (low threshold), and computer assisted with warning alerts triggered only by extreme deviance from the most conservative possible input (high threshold). In these settings, the participants made claims for payment based on the provided information that required them to make judgment decisions in contexts of varying ambiguity levels. As with tax return preparation, higher claims of credits (deductions) were rewarded with higher payment (lower tax liability), but caused higher risk of scrutiny (audit).

Participants

Because the experiment is purposefully neutral to individual tax experiences, most adult, previous wage earners qualify for participation. Participants are expected to have only a general understanding of payments and withholdings to which any employment involving a paycheck would expose them. Individual taxpayers generally do one tax return per year, at which time they either purchase a tax program they have never used before or need to get reacquainted with the current year's version of a tax program with which they have had relatively minimal experience. In this aspect of tax program use, business students are a representative sample of the population of taxpayers in general and are used as participants in this study.

In response to the common objection against using students in experimental studies, extensive research has been done to show that students' responses in studies are

not significantly different than those from other sample pools (Plott, 1987). In this case, where the effect of a computerized system is the subject of investigation, students with their assumed adaptations to computer systems in general are perhaps the natural participant to glean information relevant to the target market of the tax programs under consideration. Participants were asked about their experience with tax programs, computers and so forth in an exit questionnaire, but their experience was roughly similar with differences randomly distributed.

Four treatment groups had a minimum of 21 participants in each with a total of 105 participants in the total experiment. These 105 were drawn from the student population of a Southwest US college. There is no reason to think that undergraduate accounting students are any more or less representative of the taxpaying population or that they would be better able to complete the experimental task.

Treatment Manipulations

Manual System

As a baseline for comparing the effect of using a computerized system, 38 participants completed the task manually using only paper and pencil. For this task setting, an August Claim Form was exactly as the July Claim form. Participants entered the information by writing directly on the form and manually calculated the pay-off amount they were claiming.

Computerized System, No Alerts

To provide a comparison against manual systems and as a baseline for comparing the effects of computerized systems with warning alerts, 22 participants completed the

task using a computerized system with no alerts. For this task setting, the August Claim Form appeared on a computer screen exactly as it appeared on paper for the manual version. Participants entered the information on each line by using the mouse and keyboard of the computer. The computer provided the calculations of processing the numbers from the supporting worksheets and totaling all numbers entered on the Claim Form. The total amount claimed appeared on line 13 of the Claim Form as a running total that changed with each entry until the participants indicated that they were done.

Computerized System, Low Alerts

To provide a comparison against computerized systems without alerts, 21 participants completed the task using a computerized system with alerts that were triggered at the lowest possible deviance from the most conservative (minimum) reporting of claim numbers. For this task setting, the August Claim Form appeared on a computer screen and participants completed the Claim Form exactly as described above. In addition to the computer providing the calculations and transferring of numbers entered on the worksheets and Claim Form, the computer also evaluated the numbers for conformity to the conservative standards of the minimum amounts that should be claimed.

The slightest deviance from the preset minimum number to report (as described to participants with the June Claim Form during training) caused a separate window to pop up on the screen displaying a warning alert. The participant was reminded by the warning alert message of the instructions governing the item for which the number was entered as described in the Line-by-Line Instructions used by all participants. The

warning alert required participants to enter their choices about how to respond to the warning by clicking on a linked button before continuing with filling out the Claim Form.

Computerized System, High Alerts

To provide another comparison against computerized systems without alerts, 24 participants completed the task using a computerized system with alerts that were triggered only by high deviance from the most conservative (minimum) reporting of claim numbers. For this task setting, the August Claim Form appeared on a computer screen and participants completed the Claim Form exactly as described above for the other two computerized systems. The computer provided the calculations and transfer of numbers entered on the worksheets and Claim Form, and also evaluated the numbers by comparing them to the conservative standards of the minimum amounts that could be claimed. In this task setting, a broad degree of tolerance was allowed for deviance before warning alerts were triggered.

The deviance from the preset minimum number to report (as described to participants with the June Claim Form during training) had to be half the range to the maximum number that could be reasonably reported (also described during the training) in order to cause a separate window to pop up on the screen displaying a warning alert. If the participant triggered a warning alert by their high deviance, the instructions in the message given by the warning alert was the same as in the Low Alert task setting. If the threshold for triggering the warning alert was exceeded, the warning alert required

participants to respond by clicking the warning alert off, thus encouraging participants to enter a lower number.

Covariates

Taxpayers fail to properly report what they owe in taxes for reasons that go beyond the traditional expected utility theories of risk and penalty (Cowell, 1990). Tax research, both empirical and analytical, views choices about tax return filings as considering risk (Allingharn and Sandmo, 1972; Reinganum and Wilde 1985, 1988; Beck et al. 1991; Madeo *et al.*, 1987; Jackson and Jones, 1985; Jackson and Milliron, 1986). This study isolates system effects on aggressive reporting by providing empirical evidence to directly support (or refute) claims of facilitation and customer satisfaction with the system using a computer anxiety instrument (Loyd & Loyd, 1985) and a risk instrument (Klein, 1999) to control for possible differences in computer anxiety and general risk preference among participants.

Individual characteristic differences have been shown to affect whether a person notices, encodes, comprehends, or complies with visual warnings (Szewczyk, 2003). In a general experiment of noncompliance comparing computer-assisted reporting to other reporting media in the context of welfare fraud, significantly correlated independent variables contributing to the admission of cheating included gender and age (Van der Heijden *et al.*, 2000). Demographic factors previously found to relate to cognitive function, gender, age, background, and personal histories were included in an exit questionnaire (Appendix H).

In examining panel data, factors such as level of income and marginal tax rate have not been found to have any affect on tax preparer usage and so are not considered in this study (Christian *et al.*, 1993). In addition to measuring the reporting levels, system satisfaction, confidence levels and perceived risk of audit in each of the four conditions (manual, no alerts, low alerts and high alerts), the experiment required each participant to fill out a computer anxiety instrument, a general risk preference instrument and to report some demographic information. The data thus gathered was used to assure that there were no confounding aspects of the experiment.

IV. RESULTS

Descriptive Statistics of Participants

A total of 105 subjects participated in the experiment. All subjects were students in an accounting class with a general knowledge of revenues and expense, but no expert knowledge of taxes or computerized accounting systems. Their average age and GPA were approximately 21 and 3.00 respectively (see Table 1). Each subject participated by completing the task under one of the experimental treatment conditions of manual (pencil, paper & calculator only), tax program with no warning alerts, tax program with low level warning alerts or tax program with high level warning alerts.

TABLE 1

**Descriptive Statistics of Participants
Age, GPA, Classification & Computer Experience**

	N	Minimum	Maximum	Mean	Std. Deviation
Age	105	18	40	20.90	4.15
GPA	105	2.00	4.00	2.9952	.5003
Classification (1=Freshman &c)	105	1	4	2.10	.82
Number of Computer Classes Taken	105	0	5	1.34	1.15

Deduction Levels

Participants were asked to make deductions in the categories of advertising, automobile, parking & tolls, insurance, materials and utilities just as a taxpayer with a home-based business might claim expenses on a Schedule C. The amounts of each category's deduction (and the total of all deductions) claimed by the participants were averaged within each of the four experimental treatment conditions (see Table 2). The averages in each category are compared between each of the four experimental treatment conditions to test the first three hypotheses.

Hypothesis one states that participants using a tax program without warning alerts will have higher claims than subjects using a manual system. While the descriptive statistics suggest that deductions are lower and higher in different categories with aggregate overall lower claims from subjects using a tax program, there is no statistical support for regarding those apparent differences as significant (see Table 3). There are several explanations for these results, but there is no conclusive statement to be made about the veracity of the first hypothesis.

TABLE 2
Descriptive Statistics of Deductions Taken

Panel A: Manual Treatment

<u>Item:</u>	<u>N:</u>	<u>Mean:</u>	<u>Minimum:</u>	<u>Maximum:</u>
Advertising	38	8.76	0	12.00
Automobile	38	57.17	11.9	85.68
Parking & Tolls	38	4.04	0	7.00
Insurance	38	5.36	0	10.00
Materials	38	9.17	0	49.00
Utilities	38	2.34	0.63	5.64
Total:	38	93.03	33.5	121.86

Panel B: Computerized System with No Warning Alerts

<u>Item:</u>	<u>N:</u>	<u>Mean:</u>	<u>Minimum:</u>	<u>Maximum:</u>
Advertising	22	10.15	0	12.00
Automobile	22	51.71	27.2	68.00
Parking & Tolls	22	4.00	0	7.00
Insurance	22	2.98	1	10.00
Materials	22	11.83	0	49.00
Utilities	22	2.06	0.02	5.83
Total:	22	84.96	44.79	184.05

Panel C: Computerized System with Low Level Warning Alerts

<u>Item:</u>	<u>N:</u>	<u>Mean:</u>	<u>Minimum:</u>	<u>Maximum:</u>
Advertising	21	3.43	0	12.00
Automobile	21	28.75	3.93	75.50
Parking & Tolls	21	1.19	0	5.00
Insurance	21	2.29	1	10.00
Materials	21	3.10	0	21.00
Utilities	21	1.82	0.63	4.75
Total:	21	42.57	16.78	96.25

Panel D: Computerized System with High Level Warning Alerts

<u>Item:</u>	<u>N:</u>	<u>Mean:</u>	<u>Minimum:</u>	<u>Maximum:</u>
Advertising	24	11.17	0	12.00
Automobile	24	74.58	56.4	113.28
Parking & Tolls	24	4.88	2	5.00
Insurance	24	8.19	0	10.00
Materials	24	7.58	0	10.00
Utilities	24	3.26	1	4.8
Total:	24	111.23	62.9	131.7

TABLE 3
ANOVA for Deductions Taken
Manual versus Computerized System with No Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	23.254	1	23.254	.895	.348
	Within Groups	1506.746	58	25.978		
	Total	1530.000	59			
Automobile	Between Groups	105.942	1	105.942	.224	.638
	Within Groups	27436.766	58	473.048		
	Total	27542.707	59			
Parking & Tolls	Between Groups	7.177E-04	1	7.177E-04	.000	.990
	Within Groups	264.849	58	4.566		
	Total	264.850	59			
Insurance	Between Groups	85.392	1	85.392	6.390	.014
	Within Groups	775.078	58	13.363		
	Total	860.469	59			
Materials	Between Groups	33.963	1	33.963	.303	.584
	Within Groups	6503.228	58	112.125		
	Total	6537.191	59			
Utilities	Between Groups	1.312	1	1.312	.650	.424
	Within Groups	117.115	58	2.019		
	Total	118.427	59			
TOTAL	Between Groups	599.255	1	599.255	.605	.440
	Within Groups	57488.138	58	991.175		
	Total	58087.393	59			

Although the results do not establish any relationship of lack thereof with statistical certainty, there seems a suggestion that the substitution of expert system as surrogate for paid professional was not valid for applying the various theories of known

effects that paid professionals have on taxpayer behavior. This would seem obvious if the expert system was seen as offering no more a tool for use by the taxpayer than would mere paper and pencil. That is, if without the guidance or direction of warning alerts, the simple tax program was not capable of the technology dominance necessary for influencing reporting behavior the way a paid professional influences a taxpayer.

Table 4 shows the results of an ANOVA for deductions taken, comparing manual preparation versus using a computerized system with warning alerts triggered at low thresholds. Table 5 shows the results of an ANOVA for deductions taken, comparing manual preparation versus using a computerized system with warning alerts triggered at high thresholds. As shown, using an expert system computer program with warning alerts significantly affects the amount of deductions taken in some categories.

Hypothesis two states that subjects using tax programs with warning alerts triggered at the lowest threshold of use will have lower claims than those using tax programs without warning alerts. As predicted, the descriptive statistics presented in Table 2 indicate that the claims do go down overall and in all categories when a tax program has easily triggered (low-level) warning alerts. Analysis of variance (ANOVA) for hypothesis two is presented in Table 6. While claims in the categories of insurance and utilities are not shown to be significant, the statistical significance of all other differences is below the .001 level with the category of materials below the .05 level.

TABLE 4
ANOVA for Deductions Taken
Manual versus Computerized System with Low Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	351.485	1	351.485	12.123	.001
	Within Groups	1652.617	57	28.993		
	Total	2004.102	58			
Automobile	Between Groups	9796.864	1	9796.864	18.715	.000
	Within Groups	29838.884	57	523.489		
	Total	39635.748	58			
Parking & Tolls	Between Groups	102.799	1	102.799	22.967	.000
	Within Groups	255.133	57	4.476		
	Total	357.932	58			
Insurance	Between Groups	116.538	1	116.538	7.858	.007
	Within Groups	845.309	57	14.830		
	Total	961.847	58			
Materials	Between Groups	460.050	1	460.050	6.242	.015
	Within Groups	4201.228	57	73.706		
	Total	4661.278	58			
Utilities	Between Groups	2.803	1	2.803	1.583	.213
	Within Groups	100.882	57	1.770		
	Total	103.685	58			
TOTAL	Between Groups	31169.948	1	31169.948	35.811	.000
	Within Groups	49613.317	57	870.409		
	Total	80783.265	58			

TABLE 5
ANOVA for Deductions Taken
Manual versus Computerized System with High Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	102.548	1	102.548	5.015	.029
	Within Groups	1226.807	60	20.447		
	Total	1329.355	61			
Automobile	Between Groups	5263.959	1	5263.959	11.903	.001
	Within Groups	26534.238	60	442.237		
	Total	31798.197	61			
Parking & Tolls	Between Groups	12.658	1	12.658	4.507	.038
	Within Groups	168.520	60	2.809		
	Total	181.177	61			
Insurance	Between Groups	129.442	1	129.442	8.703	.005
	Within Groups	892.429	60	14.874		
	Total	1021.872	61			
Materials	Between Groups	26.903	1	26.903	.413	.523
	Within Groups	3906.303	60	65.105		
	Total	3933.206	61			
Utilities	Between Groups	14.283	1	14.283	8.110	.006
	Within Groups	105.676	60	1.761		
	Total	119.959	61			
TOTAL	Between Groups	6274.296	1	6274.296	8.313	.005
	Within Groups	45286.067	60	754.768		
	Total	51560.363	61			

TABLE 6
ANOVA for Deductions Taken
Computerized Systems with No Warning Alerts versus Low Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	438.654	1	438.654	16.524	.000
	Within Groups	1088.416	41	26.547		
	Total	1527.070	42			
Automobile	Between Groups	6269.329	1	6269.329	16.462	.000
	Within Groups	15613.940	41	380.828		
	Total	21883.269	42			
Parking & Tolls	Between Groups	82.086	1	82.086	16.812	.000
	Within Groups	200.193	41	4.883		
	Total	282.279	42			
Insurance	Between Groups	2.271	1	2.271	.343	.561
	Within Groups	271.340	41	6.618		
	Total	273.611	42			
Materials	Between Groups	587.302	1	587.302	7.155	.011
	Within Groups	3365.619	41	82.088		
	Total	3952.922	42			
Utilities	Between Groups	.237	1	.237	.122	.729
	Within Groups	79.418	41	1.937		
	Total	79.655	42			
TOTAL	Between Groups	18457.450	1	18457.450	26.436	.000
	Within Groups	28625.636	41	698.186		
	Total	47083.086	42			

This indicates several things relative to the use of low threshold warning alerts as compared to a simple tax program without warning alerts. Most basically, that taxpayers respond to warning alerts at all and that warning alerts have a significant influence upon

taxpayer behavior. More importantly, taxpayers can be made predictably less aggressive in their reporting by including warning alerts as part of tax programs. The suggestion that warning alerts triggered at low thresholds are most effective at encouraging minimal reporting aggression is indicated by these results compared to results of testing hypothesis 3.

Hypothesis 3 states that subjects using tax programs with warning alerts triggered at high thresholds will have higher claims than those using tax programs without warning alerts. As predicted, the descriptive statistics presented in Table 2 indicate that the claims go up overall and in every category but the materials category when a tax program with high threshold warning alerts is used. Analysis of variance (ANOVA) for hypothesis three is presented in Table 7. While claims in the categories of advertising, parking & tolls and materials are not shown to be significant, the statistical significance of all other differences is below the .01 level.

In contrast to low threshold warning alerts, high threshold warning alerts encourage more aggressive reporting. ANOVA results are shown in Table 8. This affirms the findings from hypothesis 2 that taxpayers respond to warning alerts as opposed to tax programs without warning alerts with statistically different behavior. Further, the contrast highlights the supposition that warning alerts triggered at lower thresholds are more effective in minimizing aggressive reporting among taxpayers.

TABLE 7
ANOVA for Deductions Taken
Computerized Systems with No Warning Alerts versus High Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	20.872	1	20.872	1.386	.245
	Within Groups	662.606	44	15.059		
	Total	683.478	45			
Automobile	Between Groups	5392.325	1	5392.325	19.275	.000
	Within Groups	12309.294	44	279.757		
	Total	17701.619	45			
Parking & Tolls	Between Groups	9.725	1	9.725	3.767	.059
	Within Groups	113.580	44	2.581		
	Total	123.304	45			
Insurance	Between Groups	339.939	1	339.939	46.967	.000
	Within Groups	318.461	44	7.238		
	Total	658.399	45			
Materials	Between Groups	97.442	1	97.442	1.396	.244
	Within Groups	3070.695	44	69.789		
	Total	3168.137	45			
Utilities	Between Groups	19.167	1	19.167	10.015	.003
	Within Groups	84.212	44	1.914		
	Total	103.379	45			
TOTAL	Between Groups	8498.947	1	8498.947	15.390	.000
	Within Groups	24298.386	44	552.236		
	Total	32797.332	45			

TABLE 8
ANOVA for Deductions Taken
Computerized Systems with Low Warning Alerts versus High Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Advertising	Between Groups	670.635	1	670.635	35.669	.000
	Within Groups	808.476	43	18.802		
	Total	1479.111	44			
Automobile	Between Groups	23524.845	1	23524.845	68.761	.000
	Within Groups	14711.412	43	342.126		
	Total	38236.257	44			
Parking & Tolls	Between Groups	152.048	1	152.048	62.949	.000
	Within Groups	103.863	43	2.415		
	Total	255.911	44			
Insurance	Between Groups	390.108	1	390.108	43.157	.000
	Within Groups	388.692	43	9.039		
	Total	778.800	44			
Materials	Between Groups	224.765	1	224.765	12.573	.001
	Within Groups	768.695	43	17.877		
	Total	993.459	44			
Utilities	Between Groups	23.244	1	23.244	14.703	.000
	Within Groups	67.978	43	1.581		
	Total	91.222	44			
TOTAL	Between Groups	52796.794	1	52796.794	138.232	.000
	Within Groups	16423.565	43	381.943		
	Total	69220.358	44			

Satisfaction Levels

Participants in any of the experimental treatment conditions using a tax program were asked to report their satisfaction on four validated scales: perceived accuracy of the

program, satisfaction with the accuracy of the program, user friendliness of the program and ease of use of the program. The first two of these scales measure the construct of “information content” satisfaction while the latter two of these scales measure the construct of “ease of use” satisfaction. The Likert scale numbers of satisfaction reported for each scale were averaged within each of the experimental treatment conditions (see Table 9). These averages were then compared to test hypothesis four.

TABLE 9
Descriptive Statistics
Satisfaction Reports

		Satisfied	Accurate	Information	Friendly	Easy	Ease of	TOTAL
				Content			Use	
NO Warning Alerts	Mean	4.45	4.55	9.00	4.59	4.68	9.27	18.27
	N	22	22	22	22	22	22	22
	Std. Dev.	.51	.51	.76	.50	.48	.77	1.28
LOW Threshold Warning Alerts	Mean	4.29	4.05	8.33	4.29	4.57	8.86	17.19
	N	21	21	21	21	21	21	21
	Std. Dev.	.64	.97	1.46	.78	.51	1.01	1.94
HIGH Threshold Warning Alerts	Mean	4.29	4.79	9.08	4.42	4.67	9.08	18.17
	N	24	24	24	24	24	24	24
	Std. Dev.	1.12	.41	1.25	.65	.48	1.06	1.40
Total Mean		4.34	4.48	8.82	4.43	4.64	9.07	17.90
N		67	67	67	67	67	67	67
Std. Dev.		.81	.73	1.22	.66	.48	.96	1.61

Hypothesis 4a states that participants using tax programs with warning alerts will report higher “information content” satisfaction than participants using tax programs without alerts. Hypothesis 4b states that participants using tax programs with warning

alerts will report lower “ease of use” satisfaction than participants using tax programs without alerts. The descriptive statistics show that there is lower “information content” satisfaction with low threshold warning alerts as compared to no warning alerts, but that it is higher with high threshold warning alerts. Participants using tax programs with either type of warning alerts reported lower “ease of use” satisfaction. These differences are significant only for those using tax programs with low threshold warning alerts. (see Table 10).

Because the experiment confirmed that low threshold warnings yield the most conservative reporting, the significant findings of participants in that experimental condition perceive lower information content is of particular interest. This contradicts the expectation that more guidance and direction would suggest a greater expertise of the system and thus create a higher perception of information content. Possibly, the more prevalent warning alerts were perceived as criticisms that confused or undermined the confidence of participants rather than suggest a greater expertise.

TABLE 10
ANOVA for Satisfaction

Panel A: No Warning Alerts versus Low Threshold Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Information Content	Between Groups	4.775	1	4.775	3.581	.066
	Within Groups	54.667	41	1.333		
	Total	59.442	42			
Ease of Use	Between Groups	1.856	1	1.856	2.310	.136
	Within Groups	32.935	41	.803		
	Total	34.791	42			

Panel B: No Warning Alerts versus High Threshold Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Information Content	Between Groups	7.971E-02	1	7.971E-02	.073	.788
	Within Groups	47.833	44	1.087		
	Total	47.913	45			
Ease of Use	Between Groups	.412	1	.412	.474	.495
	Within Groups	38.197	44	.868		
	Total	38.609	45			

Panel C: Low Threshold Warning Alerts versus High Threshold Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Information Content	Between Groups	6.300	1	6.300	3.451	.070
	Within Groups	78.500	43	1.826		
	Total	84.800	44			
Ease of Use	Between Groups	.573	1	.573	.531	.470
	Within Groups	46.405	43	1.079		
	Total	46.978	44			

Total satisfaction was calculated as the addition of all scales in the satisfaction instrument used. Although not significant in both cases, the total satisfaction reported by participants was lower for groups using tax programs with either type of warning alert compared to those using a tax program with no warning alert (see Table 9). Supporting the total satisfaction numbers are the four component individual scale reports that are lower for groups using tax programs with either type of warning alert compared to the group using a tax program without warning alerts, with the one exception of the accurate scale reported by the high threshold group.

The differences in perceived accuracy of the tax program, considered lower for the group with low threshold warning alerts and higher for the group with high threshold warning alerts, are significant at the .05 and .10 levels respectively (see Tables 11&12). These findings exactly contradict the predictions that the more obvious system interactions and guidance provided by warning alerts triggered at low thresholds would create a greater sense of involvement with an expert system and thus greater accuracy, the opposite prediction applying to warning alerts triggered only at high thresholds. This suggests that something about the nature of the warning alerts, other than the frequency of their support and guidance, is influencing the participants' judgments of accuracy because expert systems used to support financial decision making have been shown to inflate perceptions of accuracy (Lawrence & Sim, 1999).

TABLE 11
ANOVA for Individual Satisfaction Scales
Computerized Systems with No Warning Alerts versus Low Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
ACCURATE	Between Groups	2.663	1	2.663	4.473	.041
	Within Groups	24.407	41	.595		
	Total	27.070	42			
Satisfied	Between Groups	.306	1	.306	.914	.345
	Within Groups	13.740	41	.335		
	Total	14.047	42			
FRIENDLY	Between Groups	1.001	1	1.001	2.331	.135
	Within Groups	17.604	41	.429		
	Total	18.605	42			
EASY	Between Groups	.131	1	.131	.541	.466
	Within Groups	9.916	41	.242		
	Total	10.047	42			
TOTAL	Between Groups	12.584	1	12.584	4.708	.036
	Within Groups	109.602	41	2.673		
	Total	122.186	42			

TABLE 12

**ANOVA for Individual Satisfaction Scales
Computerized Systems with No Warning Alerts versus High Warning Alerts**

		Sum of Squares	df	Mean Square	F	Sig.
ACCURATE	Between Groups	.696	1	.696	3.253	.078
	Within Groups	9.413	44	.214		
	Total	10.109	45			
Satisfied	Between Groups	.305	1	.305	.389	.536
	Within Groups	34.413	44	.782		
	Total	34.717	45			
FRIENDLY	Between Groups	.348	1	.348	1.012	.320
	Within Groups	15.152	44	.344		
	Total	15.500	45			
EASY	Between Groups	2.635E-03	1	2.635E-03	.011	.915
	Within Groups	10.106	44	.230		
	Total	10.109	45			
TOTAL	Between Groups	.129	1	.129	.071	.791
	Within Groups	79.697	44	1.811		
	Total	79.826	45			

One explanation might be that the higher frequency of warning alerts interrupting the participant doing a simple tax reporting operation suggested more strongly that there was something wrong even though more conservative reporting was used to satisfy the warning alert trigger. Another explanation might be that the mere presence of warning alerts provides an inflated sense of accuracy whether triggered often or at all, so that it is the existence rather than the use of an expert system that creates the false perception increased accuracy. This finding, of more conservative reporting with tax programs

using low threshold alerts combined with a decrease in the user's perception of accuracy, parallels the well-known problem of taxpayers being influenced to act against their own preferences when employing paid professionals (Olszewsky, 2000). Table 13 shows the results of an ANOVA comparing perceptions of accuracy between participants using computerized systems with warning alerts triggered at low versus high thresholds.

TABLE 13
ANOVA for Individual Satisfaction Scales
Computerized Systems with Low Warning Alerts versus High Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
ACCURATE	Between Groups	6.200	1	6.200	11.637	.001
	Within Groups	22.911	43	.533		
	Total	29.111	44			
Satisfied	Between Groups	3.968E-04	1	3.968E-04	.000	.983
	Within Groups	37.244	43	.866		
	Total	37.244	44			
FRIENDLY	Between Groups	.192	1	.192	.373	.544
	Within Groups	22.119	43	.514		
	Total	22.311	44			
EASY	Between Groups	.102	1	.102	.417	.522
	Within Groups	10.476	43	.244		
	Total	10.578	44			
TOTAL	Between Groups	10.673	1	10.673	3.806	.058
	Within Groups	120.571	43	2.804		
	Total	131.244	44			

Covariate Interactions

Individual differences among the participants were analyzed to determine any possible influence on the results. Personal risk preferences, computer anxiety levels and traditionally examined demographics were considered. These results are shown in Tables 14, 15 & 16. No significance was found in the variance of any of these factors between any of the experimental groups except the risk aversion of participants in the group using tax programs with high threshold warning alerts (see Tables 15 & 16).

Those participants in the experimental group using tax programs with high threshold warning alerts scored lower on the total risk scale, *i.e.*, they had greater risk aversion, than both the group using tax programs without warning alerts and the group using tax programs with low threshold warning alerts (see Table 17). It is surprising that one experimental condition would have a group with such different risk preferences as such factors are commonly assumed to have been evenly distributed over groups through random assignment (Campbell & Stanley, 1963). Because the purpose of the experiment is to test a participants willingness to risk scrutiny under different treatment conditions, the predisposition of a participant to risk, independent of the experimental treatment, is certainly relevant to the study.

TABLE 14
ANOVA for Possible Covariates
No Warning Alerts versus Low Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	6.091E-03	1	6.091E-03	.001	.978
	Within Groups	310.738	41	7.579		
	Total	310.744	42			
Class	Between Groups	4.233E-02	1	4.233E-02	.088	.768
	Within Groups	19.725	41	.481		
	Total	19.767	42			
GPA	Between Groups	.169	1	.169	.660	.421
	Within Groups	10.485	41	.256		
	Total	10.654	42			
Computer Experience	Between Groups	5.034E-03	1	5.034E-03	.007	.933
	Within Groups	28.693	41	.700		
	Total	28.698	42			
Computer Anxiety	Between Groups	5.155E-02	1	5.155E-02	.007	.935
	Within Groups	316.693	41	7.724		
	Total	316.744	42			
Risk Preference	Between Groups	4.470	1	4.470	.178	.675
	Within Groups	1028.693	41	25.090		
	Total	1033.163	42			

TABLE 15

**ANOVA for Possible Covariates
No Warning Alerts versus High Warning Alerts**

		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	.179	1	.179	.008	.931
	Within Groups	1039.125	44	23.616		
	Total	1039.304	45			
Class	Between Groups	8.070E-03	1	8.070E-03	.013	.910
	Within Groups	27.731	44	.630		
	Total	27.739	45			
GPA	Between Groups	.112	1	.112	.519	.475
	Within Groups	9.513	44	.216		
	Total	9.625	45			
Computer Experience	Between Groups	1.647E-04	1	1.647E-04	.000	.991
	Within Groups	59.413	44	1.350		
	Total	59.413	45			
Computer Anxiety	Between Groups	8.712	1	8.712	.849	.362
	Within Groups	451.288	44	10.257		
	Total	460.000	45			
Risk Preference	Between Groups	296.160	1	296.160	15.717	.000
	Within Groups	829.080	44	18.843		
	Total	1125.239	45			

TABLE 16
ANOVA for Possible Covariates
Low Warning Alerts versus High Warning Alerts

		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	.248	1	.248	.014	.908
	Within Groups	782.863	43	18.206		
	Total	783.111	44			
Class	Between Groups	8.929E-02	1	8.929E-02	.175	.678
	Within Groups	21.911	43	.510		
	Total	22.000	44			
GPA	Between Groups	.563	1	.563	2.032	.161
	Within Groups	11.911	43	.277		
	Total	12.474	44			
Computer Experience	Between Groups	3.571E-03	1	3.571E-03	.003	.956
	Within Groups	49.196	43	1.144		
	Total	49.200	44			
Computer Anxiety	Between Groups	9.906	1	9.906	1.193	.281
	Within Groups	357.071	43	8.304		
	Total	366.978	44			
Risk Preference	Between Groups	220.248	1	220.248	9.012	.004
	Within Groups	1050.863	43	24.439		
	Total	1271.111	44			

TABLE 17
Descriptive Statistics
Risk Preference Reports

	Mean	N	Std. Deviation
Tax Programs with NO Warning Alerts	19.45	22	4.38
Tax Programs with LOW Threshold Warning Alerts	18.81	21	5.59
Tax Programs with HIGH Threshold Warning Alerts	14.38	24	4.30
Total	17.43	67	5.23

In this case of an experimental group accepting greater risk notwithstanding a greater predisposition to avoid risk, the unexpected confound lends power to the results. Participants using tax programs with high threshold warning alerts were found to take significantly higher deductions in every category, other than materials, thus taking significantly higher risks of scrutiny and resultant loss. This willingness to enter into high-risk behavior is counter-intuitive given the relatively stronger unwillingness of participants to enter into such behavior and strengthens the findings that tax programs with high threshold warning alerts encourage aggressive reporting.

V. SUMMARY

Conclusions

Because taxpayers are using tax programs in growing numbers and this use of an expert system can substitute for employing tax professionals in some cases, some effects of using these tax programs are expected to be similar to those occurring when professionals are used. These effects can include the well-documented problem of tax reporting that is contrary to taxpayers' preferences (Olszewsky, 2000). This study shows how tax programs can be designed to better serve the taxpayers' needs through attention to the type of warning alerts used.

There are four key findings from this research: 1) the presence of warning alerts in a tax program promotes different taxpayer behavior than if there are no warning alerts, 2) warning alerts in a tax program, triggered at low versus high levels, have a distinct influence upon the level of deductions claimed by taxpayers, 3) the presence of warning alerts in a tax program promotes different taxpayer perceptions of accuracy of the program than if there are no warning alerts and 4) warning alerts in a tax program, triggered at low versus high levels, will influence the level of information content perceived by taxpayers. These findings, when considered together, validate the proposed framework for the future study of taxpayer behavior in computerized accounting system environments and affirm the importance of future research in this area.

The results indicate the potential for improving taxpayer behavior through well-designed tax programs. Taxpayers typically seek to be in a safer, more conservative

reporting position. Low threshold warning alerts encourage more conservative reporting while high threshold warning alerts encourage more aggressive reporting. This study shows that the actual effect of warning alerts can cause behavior contrary to taxpayers' preferences, and at the same time lead to taxpayers perceiving that they are reporting conservatively when in fact they are not. Thus, the designers of expert system tax programs should carefully consider the effects of warning alerts and other instructions presented to taxpayers.

Limitations

The question of whether conservatism serves the true interests of the client cannot be answered by a study of this type. This study merely serves to further demonstrate the extreme to which taxpayers are swayed in their judgments by perceived aspects of the tax software that are irrelevant to the facts of their tax situations. Exactly what taxpayers need to be given by way of guidance and direction to comport their behavior to the tax laws is a critical question of public policy.

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APPENDIX A

BACKGROUND INFORMATION PROVIDED TO PARTICIPANTS

This exercise assumes that you have been working at home for the Company taking orders for, assembling and delivering gift baskets. You have already paid the regular rate for that work, but you are also entitled to a monthly bonus based on your activity level each month. Your bonus pay must be reduced by charges that you have not paid for such as the monthly franchise fee you are responsible for. Your monthly pay slip voucher (in the accompanying envelope) shows these amounts along with other information.

You are allowed to claim credits in addition to the bonus you are due. These are based on various aspects of your home business activity. There is a Claim Form with line-by-line instructions in your envelope to summarize your aggregate claim for money due to you. You work in an urban area with population between 100,000 and 250,000.

You may take credit for expenses you have incurred only if they are directly related to work you have done. Receipts related to these expenses are included in your envelope. Not all receipts or receipt numbers necessarily apply to credits you can claim. Detailed rules for using claiming credits are spelled out in the line-by-line instructions.

Because you have been a franchisee for less than five years, you have a 30% chance of having your claim form scrutinized for unauthorized claims. If you are unreasonable in any of the amounts you claim for reimbursement, that chance increases to 70% chance. If you clearly attempt to defraud the Company, your claim for reimbursement will definitely (100%) be scrutinized. Failing to exclude expenses for personal use (not business use) is an example of what can increase the chance for scrutiny. In the event that an incorrect amount is found as the result of any scrutiny, your requested pay-off will be reduced by twice the amount of the improper claim.

Please ask any questions about how the pay-off works?

You have contracted with the Company for the franchise rights to do a part-time job creating and delivering gift baskets. You use baskets, potpourris, soaps and trinkets that are delivered to your house by the Company. You are also supplied with shredded paper for the baskets and a shrink-wrap that requires heating to seal around the finished product.

You must use the claim form to record and calculate any payment due to you.

When you have filled out your claim form, print it and turn it in.

Thank you for your participation.

APPENDIX B**TUTORIAL****(JUNE FINANCIAL RECORDS AND LINE-BY-LINE INSTRUCTIONS)****Claim Form****Line-by-Line Instructions****1) Bonus Earned**

On line 1 of the Claim Form, place the amount of Bonus you have earned for the month. This amount is reported to you as Item 5 on your Pay Slip Voucher. The bonus is based on how much you worked over the minimum expected work level.

Your June Pay Slip Voucher is reproduced on the next page:

<u>Pay Slip Voucher</u>	
<u>June 2002</u>	
1) Employee ID Code: 87068	5) Monthly Bonus Earned: \$40.00
2) Franchise Fee Due: \$35.00	6) Franchise ID Number: 1205
3) Unpaid Wages: -0-	7) Local Surcharges: -0-
4) Previous Amount Due: -0-	8) Late Payment Charges: -0-

2) Franchise Fees Due

On line 2 of the Claim Form, place the amount of the Franchise Fees you have been charged for working under the national contract. This amount has been based on

5) Advertising

In addition to the Standard Promotion Allowance, any money that you spent for the active promotion of the business is allowed as a separate credit. Examples would include having business cards printed, sponsoring a sporting event that put the Company logo in their programs, or placing a business advertisement in a local newspaper.

June's Advertising expense claim is supported by the receipt reproduced below:

<p>THE BATTALIAN The Independent Student Voice of Texas A&M University CLASSIFIED ADVERTISEMENTS ***** Paid 6-4-02: \$15 ***** TEXT: “Say it with Potpourri. She’ll always remember the smell of the summer breeze. Same Day Delivery ”</p>
--

6) Automobile Mileage

Credits are allowed for car mileage driven for the delivery of product. This mileage must be for business purposes only and not for personal reasons. For example, if in one day you make four deliveries that require 8 miles of driving and you also go to lunch at a restaurant that is 3 miles out of the way, then you have a total car mileage driven of 11 miles that day, but 3 miles are considered personal and only 8 miles can be used in calculating the Automobile Mileage Credit.

You have been given a mileage log that allows you to record the odometer readings of your automobile each month and thereby determine the total mileage you

<u>MILEAGE RECORD</u>		
<u>DATE:</u>	<u>ODOMETER</u>	<u>MILEAGE</u>
January 31	<u>3917</u>	
February 28	<u>4135</u>	<u>218</u>
March 31	<u>4346</u>	<u>211</u>
April 30	<u>4421</u>	<u>75</u>
May 31	<u>4589</u>	<u>168</u>
June 30	<u>5044</u>	<u>455</u>
July 31	<u>5346</u>	<u>302</u>
August 31	<u>5678</u>	<u>332</u>
September 30	_____	_____
October 31	_____	_____
November 30	_____	_____
December 31	_____	_____

For the Minimum Claim, 455 (the total mileage driven in June) can be considered about 78% from personal driving use of the automobile. Putting $(455 \times 78\%)$ 355 on line two of the worksheet on the previous page leaves 100 miles on line 3 for delivery miles driven. That yields a Credit of 34 to claim on line 6 of the Claim Form.

The Maximum suggests only 12%, a minimal 55 of the total 455 miles, was used for personal driving while 400 miles of delivery use is reported on line 3 of the previous page's worksheet.

7) Parking & Tolls

Any money paid for parking or tolls required for the delivery of any product is allowed as a Franchise Credit on the Claim Form, such as for parking in a parking garage when making a delivery to an office address.

The Minimum strategy is to claim no Parking & Tolls amount since there is no receipt for it, and the maximum strategy is to assume that there must have been some Parking & Tolls amount to claim even without a receipt. So zero (or blank) is reported at the Minimum and 10 is reported at the Maximum. Here, 10 is a number unsupported by receipts or documents, but there is some vague basis to assume that there may have been a parking and tolls expense like this. In other words, it is not necessarily true, but it stands to reason.

8) Insurance

Insurance directly related the protection of the product from loss by theft or casualty is allowed as a Franchise Credit. General insurance is not allowed, such as on your automobile, house, or life, unless it is additional insurance purchased to cover the additional business.

The Insurance claim comes from the June invoice for insurance reproduced below with the minimum strategy assuming that the renters insurance covers all personal property in the house of which one tenth is work related materials. The maximum strategy assumes that the renters insurance is only for the work related materials in the house. Because you have already claimed 34 cents per mile on your automobile, there is no separate claim for auto insurance.

Comprehensive Insurance Company	
For all your insurance needs <i>You're covered with us.</i>	
Statement Date: June 1st	
Renters Insurance: \$10	Expires August 1
Auto Insurance: 12	Expires July 1
Life Insurance <u>15</u>	Expires August 1
Due and Payable: \$37	

9) Materials & Supplies

The Company supplies the materials although Franchise Credits are allowed if additional materials are purchased. Supplies required for business use in your house because you have no other office are also a source of Franchise Credits. Again, no personal purchases are allowed, but costs of materials used exclusively for making product or exclusively for office work, such as filing the Claim Form, can be listed on line 9.

10) Utilities

Utilities expenses related to the making of product are sources of Franchise Credits. The proportion of the total utilities that can be taken as credits are that percentage of your total home that you use making product times the portion of days that you work. For example, if you make product in a kitchen that is one of four rooms in your home, and you work 10 days a month, then a \$20 utility bill would be a Franchise Credit of 25% (one out of four rooms) times 33% (10 out of 30 days) times \$20 or $.25 \times .33 \times 20 = \2.06 , so \$2.06 would be entered on line 10 of the Claim Form. The following worksheet may be used for calculating the amount of Utilities Credit to claim.

Utility Bill June, 2002	
Last Month's Charge:	\$17.00
Last Month's Payment:	17.00
This Month's Charge:	18.00
 Total Due by June 23, 2002:	 \$18.00
Total Due after June 23, 2002:	\$23.00

11) Total Franchise Credits

Add lines 4 – 10 and enter the total on line 11 of the Claim Form.

12) Reimbursement Allowance

Multiply Total Credits on Line 11 by 15% (0.15) and enter on line 12 of the Claim Form.

13) Total Pay-Off Amount

Subtract the amount on Line 2 from the amount on Line 1 and add that result to the amount on Line 12. The amount on Line 13 of the Claim Form is the combination of the numbers on Line 1, Line 2 and Line 12, remembering that the number on Line 2 is negative.

This is the amount of your Earned Bonus that you are requesting to have returned to you.

General Comments:

The pay-offs on line 13 of **\$12.95** for the minimum strategy, and **\$26.63** for the maximum strategy follow mathematically from the numbers entered on earlier lines. Those dollar figures on line 13 will be the pay-offs as long as there is no scrutiny of the Claim Form.

If there were scrutiny of the Claim Form, then the resulting effect of that scrutiny is shown on line 14.

For the minimum strategy, no correction would result even if there is scrutiny, so the pay-off would remain unchanged at **\$12.95**. For the maximum strategy, **IF** there is scrutiny, the overstatement of Automobile Mileage, the claiming of Parking & Tolls with no documentation to support the expenses, the allocation of Insurance costs, and the assumed numbers for Utilities calculation would all result in a total reduction of **\$28.92** from the pay-off leaving the **\$2.72** shown on line 15.

Where the maximum is claimed, and **IF** there is scrutiny, the scrutiny would suggest that several credits should be lowered to the total minimum. Taking out the \$10 Parking & Tolls, \$9 of Insurance, \$3.50 of Utilities, and \$100 of Automobile Mileage lowers the reimbursement by the related \$18.38. Because the maximum reporting is the most extreme, scrutiny will also cause the highest penalty of \$10.53 to be assessed. This brings the total reduction to \$28.91 shown on line 14 **IF** scrutiny occurs.

If you took the minimum approach, then your chances of being scrutinized are only 2% and that the results of that scrutiny are to not change the amount of the pay-off. If you took a maximum approach, then your chances of being scrutinized could go up to 48%. The higher the amount of your claim between the minimum and maximum, the higher the chances of being scrutinized between the 2% and 48% range. The pay-off could be reduced depending on how high the amount of credits that you claim.

APPENDIX C
COMPLETED EXAMPLE

Claim Form

COMPARISON - June 2002

	<i>Minimum</i>	<i>Maximum</i>
1) Bonus Earned	<u>40</u>	<u>40</u>
2) Franchise Fees Due	<u>35</u>	<u>35</u>
3) Franchise Credits:		
	<i>Minimum</i>	<i>Maximum</i>
4) Standard Promotion Allowance	<u>2</u>	<u>2</u>
5) Advertising	<u>15</u>	<u>15</u>
<i>Minimum = 100 miles & Maximum = 400 miles</i>		
6) Automobile Mileage _____ x 34 cents ..	<u>34</u>	<u>136</u>
7) Parking & Tolls	<u>0</u>	<u>10</u>
8) Insurance	<u>1</u>	<u>10</u>
9) Materials	_____	_____
10) Utilities	<u>1</u>	<u>4.50</u>
11) Total Franchise Credits	<u>53</u>	<u>177.50</u>
12) Reimbursement (Credits x 15%)	<u>7.95</u>	<u>26.63</u>
13) Total Pay-Off Amount (<i>IF no Scrutiny</i>)	<u>12.95</u>	<u>31.63</u>
14) <i>Effect of Scrutiny (IF any)</i>	<u>0</u>	<u><28.91></u>
15) <i>Pay-off IF Scrutiny Occurs</i>	<u>12.95</u>	<u>2.72</u>

APPENDIX D

PRACTICE SET FOR MANUAL COMPLETION OF A CLAIM FORM

JULY Claim Form

Line-by-Line Instructions

1) Bonus Earned

On line 1 of the Claim Form, place the amount of Bonus you have earned for the month. This amount is reported to you as Item 5 on your Pay Slip Voucher. The bonus is based on how much you worked over the minimum expected work level.

Your July Pay Slip Voucher is reproduced below:

<u>Pay Slip Voucher</u>	
<u>July 2002</u>	
1) Employee ID Code: 87068	5) Monthly Bonus Earned: \$30.00
2) Franchise Fee Due: \$26.00	6) Franchise ID Number: 1205
3) Unpaid Wages: -0-	7) Local Surcharges: -0-
4) Previous Amount Due: -0-	8) Late Payment Charges: -0-

2) Franchise Fees Due

On line 2 of the Claim Form, place the amount of the Franchise Fees you have been charged for working under the national contract. This amount has been based on

5) Advertising

In addition to the Standard Promotion Allowance, any money that you spent for the active promotion of the business is allowed as a separate credit. Examples would include having business cards printed, sponsoring a sporting event that put the Company logo in their programs, or placing a business advertisement in a local newspaper.

There is no receipt to support an Advertising expense claim for July.

6) Automobile Mileage

Credits are allowed for car mileage driven for the delivery of product. This mileage must be for business purposes only and not for personal reasons. For example, if in one day you make four deliveries that require 8 miles of driving and you also go to lunch at a restaurant that is 3 miles out of the way, then you have a total car mileage driven of 11 miles that day, but 3 miles are considered personal and only 8 miles can be used in calculating the Automobile Mileage Credit.

You have been given a mileage log that allows you to record the odometer readings of your automobile each month and thereby determine the total mileage you have driven in each month. You must also keep track of how many of those miles were driven for deliveries versus how many were driven for personal reasons.

Different people have different driving habits, so it is recommended that all deliveries be made with only one single automobile.

The worksheet on the next page can be used for calculating the amount of Automobile Mileage Credit to claim:

<u>MILEAGE RECORD</u>		
<u>DATE:</u>	<u>ODOMETER</u>	<u>MILEAGE</u>
January 31	<u>3917</u>	
February 28	<u>4135</u>	<u>218</u>
March 31	<u>4346</u>	<u>211</u>
April 30	<u>4421</u>	<u>75</u>
May 31	<u>4589</u>	<u>168</u>
June 30	<u>5044</u>	<u>455</u>
July 31	<u>5346</u>	<u>302</u>
August 31	<u>5678</u>	<u>332</u>
September 30	_____	_____
October 31	_____	_____
November 30	_____	_____
December 31	_____	_____

7) Parking & Tolls

Any money paid for parking or tolls required for the delivery of any product is allowed as a Franchise Credit on the Claim Form, such as for parking in a parking garage when making a delivery to an office address.

The minimum strategy is to claim no Parking & Tolls amount since there is no receipt for it, and the maximum strategy is to assume that there must have been some Parking & Tolls amount to claim even without a receipt.

8) Insurance

Insurance directly related the protection of the product from loss by theft or casualty is allowed as a Franchise Credit. General insurance is not allowed, such as on your automobile, house, or life, unless it is additional insurance purchased to cover the additional business.

The Insurance claim comes from the July invoice for insurance reproduced below with the minimum strategy assuming that the renters insurance covers all personal property in the house of which one tenth is work related materials. The maximum strategy assumes that the renters insurance is only for the work related materials in the house. Because you have already claimed 34 cents per mile on your automobile, there is no separate claim for auto insurance.

Comprehensive Insurance Company	
For all your insurance needs	
<i>You're covered with us.</i>	
Statement Date: July 1st	
Renters Insurance:	\$-0- Expires August 1
Auto Insurance:	12 Expires August 1
Life Insurance	-0- Expires August 1
Due and Payable:	\$12

9) Materials & Supplies

The Company supplies the materials although Franchise Credits are allowed if additional materials are purchased. Supplies required for business use in your house because you have no other office are also a source of Franchise Credits. Again, no personal purchases are allowed, but costs of materials used exclusively for making

The two Utilities figures on the Claim Form can be calculated from the worksheet on the previous page using numbers on the utilities bill reproduced on the next page. The minimum strategy assumes that the work is mostly done in the kitchen (one of five rooms in the house) and that work is only being done about a fourth of the days of the month. The maximum strategy claims that a fourth of the house is used for the work and that work was done every day of the month.

Utility Bill July, 2002	
Last Month's Charge:	\$18.00
Last Month's Payment:	18.00
This Month's Charge:	16.00
 Total Due by July 23, 2002:	 \$16.00
Total Due after July 23, 2002:	\$21.00

11) Total Franchise Credits

Add lines 4 – 10 and enter the total on line 11 of the Claim Form.

12) Reimbursement Allowance

Multiply Total Credits on Line 11 by 15% (0.15) and enter on line 12 of the Claim Form.

13) Total Pay-Off Amount

Subtract the amount on Line 2 from the amount on Line 1 and add that result to the amount on Line 12. The amount on Line 13 of the Claim Form is the combination of the numbers on Line 1, Line 2 and Line 12, remembering that the number on Line 2 is negative.

This is the amount of your Earned Bonus that you are requesting to have returned to you.

General Comments:

For a minimum strategy, no correction could result even if there is scrutiny, so the pay-off will remain unchanged at about **\$7.00**. For a maximum strategy, IF there is no scrutiny, the pay-off could be as high as **\$30.00** or so. IF there is scrutiny, it could result in reducing the maximum strategy to as low as a couple of dollars (**\$2.00**).

If you took the minimum approach, then your chances of being scrutinized are only 2% and that the results of that scrutiny are to not change the amount of the pay-off. If you took a maximum approach, then your chances of being scrutinized could go up to 48%. The higher the amount of your claim between the minimum and maximum, the higher the chances of being scrutinized between the 2% and 48% range. The pay-off could be reduced depending on how high the amount of credits that you claim.

APPENDIX E

EXPERIMENT INSTRUMENT FOR RECORDING DATA

Claim Form

For Franchise I.D.# (line 6 of Payslip Voucher) _____

July 2002

- 1) Bonus Earned _____
- 2) Franchise Fees Due _____
- 3) Franchise Credits:
- 4) Standard Promotion Allowance _____
- 5) Advertising _____
- 6) Automobile Mileage _____ x 34 cents per mile _____
- 7) Parking & Tolls _____
- 8) Insurance _____
- 9) Materials. _____
- 10) Utilities _____
- 11) Total Franchise Credits _____
- 12) Reimbursement (Credits x 15%) _____
- 13) Total Pay-Off Amount _____

APPENDIX F
INFORMATION USED FOR EXPERIMENT

AUGUST Claim Form
Line-by-Line Instructions

1) Bonus Earned

On line 1 of the Claim Form, place the amount of Bonus you have earned for the month. This amount is reported to you as Item 5 on your Pay Slip Voucher. The bonus is based on how much you worked over the minimum expected work level.

Your August Pay Slip Voucher is reproduced below:

<u>Pay Slip Voucher</u>	
<u>August 2002</u>	
1) Employee ID Code: 87068	5) Monthly Bonus Earned: \$25.00
2) Franchise Fee Due: \$23.00	6) Franchise ID Number: 1205
3) Unpaid Wages: -0-	7) Local Surcharges: -0-
4) Previous Amount Due: -0-	8) Late Payment Charges: -0-

2) Franchise Fees Due

On line 2 of the Claim Form, place the amount of the Franchise Fees you have been charged for working under the national contract. This amount has been based on

5) Advertising

In addition to the Standard Promotion Allowance, any money that you spent for the active promotion of the business is allowed as a separate credit. Examples would include having business cards printed, sponsoring a sporting event that put the Company logo in their programs, or placing a business advertisement in a local newspaper.

The only receipt related to Advertising expense in August is reproduced below:

BRYAN EAGLE	
CLASSIFIED ADVERTISEMENTS	
Paid 8-17-02:	\$12
TEXT:	
"Roommate wanted, private bath, share extra big kitchen, no slackers 555-2107"	

6) Automobile Mileage

Credits are allowed for car mileage driven for the delivery of product. This mileage must be for business purposes only and not for personal reasons. For example, if in one day you make four deliveries that require 8 miles of driving and you also go to lunch at a restaurant that is 3 miles out of the way, then you have a total car mileage driven of 11 miles that day, but 3 miles are considered personal and only 8 miles can be used in calculating the Automobile Mileage Credit.

You have been given a mileage log that allows you to record the odometer readings of your automobile each month and thereby determine the total mileage you have driven in each month. You must also keep track of how many of those miles were driven for deliveries versus how many were driven for personal reasons.

Different people have different driving habits, so it is recommended that all deliveries be made with only one single automobile.

The following worksheet on the next page can be used for calculating the amount of Automobile Mileage Credit to claim:

*/

Automobile Mileage Credit Worksheet

1. Total mileage driven in the month (from the Mileage Record provided) _____

2. Total mileage driven for personal reasons (include personal errands) (_____)

3. Total mileage driven for deliveries (subtract line 2 from line 1 above) _____

Enter the number from line 3 above on the Claim Form line 6) a)

4. Multiply the number on line 3 above by 0.34 (34 cents per mile) _____

Enter the number from line 4 above on the Claim Form line 6) b)

*/

A minimum strategy would be to assume that a fourth or less of the recorded miles were used for business (not personal) use, and a maximum strategy would be to assume that nearly all of the miles were used for business (not personal) use. The worksheet above can be used to calculate the number claimed under each of these assumptions using the number for August from the Mileage Record on the next page:

<u>MILEAGE RECORD</u>		
<u>DATE:</u>	<u>ODOMETER</u>	<u>MILEAGE</u>
January 31	<u>3917</u>	
February 28	<u>4135</u>	<u>218</u>
March 31	<u>4346</u>	<u>211</u>
April 30	<u>4421</u>	<u>75</u>
May 31	<u>4589</u>	<u>168</u>
June 30	<u>5044</u>	<u>455</u>
July 31	<u>5346</u>	<u>302</u>
August 31	<u>5678</u>	<u>332</u>
September 30	_____	_____
October 31	_____	_____
November 30	_____	_____
December 31	_____	_____

7) Parking & Tolls

Any money paid for parking or tolls required for the delivery of any product is allowed as a Franchise Credit on the Claim Form, such as for parking in a parking garage when making a delivery to an office address.

The note on the following page is related to parking.

TAMU PTTs

8-28-02

Parking Ticket (reduced by appeals board)

\$5.00

This has been paid with your tuition bill.

Thank you!

8) Insurance

Insurance directly related the protection of the product from loss by theft or casualty is allowed as a Franchise Credit. General insurance is not allowed, such as on your automobile, house, or life, unless it is additional insurance purchased to cover the additional business.

The Insurance claim comes from the August invoice for insurance reproduced below with the minimum strategy assuming that the renters insurance covers all personal property in the house of which one tenth is work related materials. The maximum strategy assumes that the renters insurance is only for the work related materials in the house. Because you have already claimed 34 cents per mile on your automobile, there is no separate claim for auto insurance.

Comprehensive Insurance Company

For all your insurance needs

You're covered with us.

Statement Date: August 1st

Renters Insurance:	\$10	Expires October 1
Auto Insurance:	12	Expires September 1
Life Insurance	<u>15</u>	Expires October 1
Due and Payable:	\$37	

9) Materials & Supplies

The Company supplies the materials although Franchise Credits are allowed if additional materials are purchased. Supplies required for business use in your house because you have no other office are also a source of Franchise Credits. Again, no personal purchases are allowed, but costs of materials used exclusively for making product or exclusively for office work, such as filing the Claim Form, can be listed on line 9.

The following receipt is for materials and supplies purchased in August although not obviously related to business expenses:

<u>OFFICE DEPOT</u>	
<u>RECIEPT</u>	
<u>AUGUST 28, 2002</u>	
Paper	\$5
Pencils	7
Envelopes	9
Calculator	12
Back Pack	16
TOTAL:	\$49
Cash Received:	\$49
<i>We appreciate your business. Please remember us for all your school supplies.</i>	

The maximum strategy claims that a fourth of the house is used for the work and that work was done every day of the month.

Utility Bill August, 2002	
Last Month's Charge:	\$16.00
Last Month's Payment:	16.00
This Month's Charge:	19.00
 Total Due by August 23, 2002:	 \$19.00
Total Due after August 23, 2002:	\$24.00

11) Total Franchise Credits

Add lines 4 – 10 and enter the total on line 11 of the Claim Form.

12) Reimbursement Allowance

Multiply Total Credits on Line 11 by 15% (0.15) and enter on line 12 of the Claim Form.

13) Total Pay-Off Amount

Subtract the amount on Line 2 from the amount on Line 1 and add that result to the amount on Line 12. The amount on Line 13 of the Claim Form is the combination of the numbers on Line 1, Line 2 and Line 12, remembering that the number on Line 2 is negative.

This is the amount of your Earned Bonus that you are requesting to have returned to you.

General Comments:

If you take the minimum approach, then your chances of being scrutinized are only 2% and the results of that scrutiny cannot change the amount of the pay-off. If you take a maximum approach, then your chances of being scrutinized could go up to 48%. The higher the amount of your claim between the minimum and maximum, the higher the chances of being scrutinized between the 2% and 48% range. The pay-off could be reduced depending on how high the amount of credits that you claim.

When you have filled out your August claim form, print it and turn it in.

You will be asked to complete some follow-up forms.

Thank you for your participation.

APPENDIX G

SCRIPTED INSTRUCTIONS

Experimenter Script

1.

You have three envelopes marked “Admin,” “July” and “August.”

Everyone open only the Admin envelope. You will see a Consent Form that you must read, sign, and pass in. When you are done with that, we will discuss the Franchisee Background sheet.

2.

I hope you will not mind if we read the Franchisee Background sheet together.

3.

Okay, in the envelope marked Admin, you will find a June Claim Form with columns of comparison numbers and everything related to where those numbers may have come from. Go ahead and open just that envelope marked Admin. Normally, there would be only one number per line, but two columns are used to provide a side-by-side comparison of a “low risk” strategy of claiming credits versus a “high risk” strategy of claiming credits. So let us all go over that together, in order to be sure about what might be right or wrong on this Claim Form.

4.

Find the receipts that were stapled together after filling out June’s Claim Form. You can see that you have a Payslip Voucher telling you the amount of Bonus Earned and the amount of Franchise Charge to put on the Claim Form.

Also, you can see from the Standard Promotion Allowance Table on page 2 of the line-by-line instructions that \$2 is the correct amount for line 4 of the Claim Form.

The Advertising expense claim is supported by the receipt from the Battalion.

The numbers on line 6 of the Claim Form are both based on the mileage recorded for June in the Mileage Record. A low risk strategy would be to assume that a fourth or less of the recorded miles were used for business (not personal) use, and a high-risk strategy would be to assume that nearly all of the miles were used for business (not

personal) use. The worksheet on page 3 of the line-by-line instructions can be used to calculate the number claimed under each of these assumptions.

The low-risk strategy is to claim no Parking & Tolls amount since there is no receipt for it, and the high-risk strategy is to assume that there must have been some Parking & Tolls amount to claim even without a receipt.

The Insurance claim comes from the June invoice for insurance with the low-risk strategy assuming that the renters insurance covers all personal property in the house of which one tenth is work related materials. The high-risk strategy assumes that the renters insurance is only for the work related materials in the house. Because you have already claimed 34 cents per mile on your automobile, there is no separate claim for auto insurance.

The two Utilities figures on the Claim Form can be calculated from the worksheet on 4 of the line-by-line instructions using numbers on the utilities bill. The low-risk strategy assumes that the work is mostly done in the kitchen (one of five rooms in the house) and that work is only being done about a fourth of the days of the month. The high-risk strategy claims that a fourth of the house is used for the work and that work was done every day of the month.

The math seems to add up and the all the calculations seem correct to get pay-offs on line 13 of **\$12.95** for the low-risk strategy, and **\$26.63** for the high-risk strategy. Those would be the pay-offs as long as there was no scrutiny of the Claim Form.

If there were scrutiny of the Claim Form (30% chance for the low-risk strategy and higher for the high-risk strategy), then the resulting effect of that scrutiny is shown on line 14. For the low-risk strategy, no correction would result even if there was scrutiny, so the pay-off would remain unchanged at **\$12.95**. For the high-risk strategy, IF there was scrutiny, the overstatement of Automobile Mileage, the claiming of Parking & Tolls with no documentation to support the expenses, the allocation of Insurance costs, and the assumed numbers for Utilities calculation would all result in a total reduction of **\$19.28** times the 15% reimbursement rate. As a penalty, half again that much ($\$19.28 * 0.5 =$ **\$9.64**) would also be deducted from the pay-off leaving the **\$2.72** shown on line 15.

Are there any questions about these two strategies compared on June's Claim Form?

5.

You can keep any information from June available, but be careful not to confuse the receipt amounts with those from other months.

Let us all go forward with doing July's Claim Form based on what we have just learned looking at the June Claim Form comparisons.

6.

The July receipts are loose in the envelope, so be sure to get them all out and keep the stapled June receipts separate from them.

I will be walking around to answer any questions as you complete the July Claim Form. Be sure to put your Franchise Number from the Pay Slip Voucher on the second line from the top of the Claim Form.

When everyone is done, we can discuss the results you came up with.

7.

Alright, everyone is a little different, but you probably should have a Total Pay-Off Amount calculated for July of between **\$7.00 & \$40.00**.

8.

Did anyone have anything outside that range?

Okay then, remember that if you took the low-risk approach that your chances of being scrutinized are 30% and that if you took a higher-risk approach that your chances of being scrutinized would be higher. The pay-off could be reduced depending on how extreme the risk you took in claiming credits. As an extreme example, a pay-off of \$20 could get reduced to a single dollar if scrutiny revealed an attempt to defraud the Company on the July Claim Form. A claim for \$7 could not be reduced on the July Claim Form even if scrutinized.

9.

I want you to keep whatever materials out that you want to help you with the August Claim Form, and use the envelopes to keep things out of the way. Please be careful not

to confuse the receipts from different months as many look similar although from different months.

10.

Everyone should work individually and when you are done filling out the August Claim Form, bring it the cashier for payment.

11.

If there are no further questions, you may go ahead and open the August envelopes and begin.

You should find everything you need in that last envelope.

It is up to you to choose the amount of risk you will use in filling out the Claim Form for August.

APPENDIX H
DEMOGRAPHIC SURVEY

Age: _____

Classification: Freshman Sophomore Junior Senior Other
(explain)

Cumulative Grade Point Average: _____

How many computer classes have you had: _____

VITA

Born to a loving family, I experienced a happy childhood until I went to school and it was pretty much downhill from there.

Currently, I have a homestead exemption (which is a wonderful thing in Texas with a rich legal history and a tidy property tax savings) at my permanent address of:

Steven J. Olszewsky, 412D First Street; College Station, TX 77840-7608.

My educational background produced for me the following degrees: Bachelor of Science in accounting (with a minor in economics) from the University of Kentucky in 1985, Master of Business Administration (with a concentration in taxation) from the University of Kentucky in 1993, Juris Doctor from the University of Kentucky in 1993, and, of course, Doctor of Philosophy in accounting from Texas A&M University in 2003 (all without a high-school degree or G.E.D., not bad for a drop-out).

My professional licensures include: Certified Public Accountant & Attorney-at-Law, both in Kentucky.

I have taught accounting and law at such schools as: University of Kentucky, Eastern Kentucky University, Sullivan College, Georgetown College, Transylvania University, Blinn College, The University of Texas at Austin, Texas A&M University, University of Houston and Prairie View A&M University, as well as private review courses including Kaplan, Lambers & Becker, the latter two I initiated in Kentucky.

My publications have appeared in *Tax Notes* and *Oil, Gas & Energy Quarterly*.

I have presented papers at numerous refereed conferences both national and regional.

I continue to lobby for the Religious Freedom Peace Tax Fund Act (HR 2037 in the current 108th Congress) whereby citizens who conscientiously object to war (as defined by the Military Selective Service Act, 50 U.S.C. App. 450 et seq.) can fully pay 100% of their taxes with the official recognition that their money is to be used only for any non-military government spending. This legislation is the first step toward allowing a true democracy in which men and women of conscience can begin to work against the horrors of war. Today, there are 32 members of Congress co-sponsoring the bill.