

“What caused the recent accounting scandals? Was it a problem with the accountants themselves, or a failure of accounting standards? This study suggests that the problem lies in part with both the cognitive styles of accountants and the rules-based nature of accounting standards.”

## Rules Versus Principles: Accountants' Cognitive Styles and Professional Penalties

T. Elizabeth Stetson  
Oklahoma City University

### ABSTRACT

This study examined the effect of accountants' cognitive styles and the severity of potential professional penalties under rules-based versus principles-based standards in the context of client pressure to approve of an inappropriately aggressive transaction. Cognitive style preferences were operationalized using the Myers-Briggs Type Indicator® (MBTI®) instrument. The participants' measured Judging (T–F) mental function interacted significantly with standard precision and was significant under rules but not under principles, with Thinking

types under rules exhibiting greater aggressiveness. This effect was enhanced for Ts who were also Ss and Js. Although 40.2% of the general U.S. population are Ts, 70.5% of accounting professionals exhibit that preference. Although 20.3% of the general U.S. population are STJs, nearly twice as many accounting professionals (39.1%) are STJs. Thus, this study provides some evidence that the cognitive style preferences that are more prevalent among accounting professionals than the general U.S. population may lead to greater willingness to approve an inappropriately aggressive transaction



under rules but not under principles. Surprisingly, under both rules-based and principles-based standards, greater aggressiveness was indicated when potential professional penalties were high (three times the fee obtained for the opinion) rather than low (\$250).

Note: For the Myers-Briggs Type Indicator® (MBTI®) instrument, the eight preference categories are the following: Extraversion (E) versus Introversion (I), Sensing (S) versus Intuition (N), Thinking (T) versus Feeling (F), Judging (J) versus Perceiving (P).

## INTRODUCTION

This study examined the effect on accountants' judgment and decision making of their cognitive style according to the Myers-Briggs Type Indicator (MBTI) instrument under standards of varying precision (i.e., rules-based vs. principles-based) and potential professional penalties of varying severity. The study participants (62 CPAs) were asked to indicate whether in exchange for a lucrative fee they would provide a written opinion stating that an "aggressive transaction" would be upheld if challenged by the pertinent regulatory authority ("approve an aggressive transaction"). "Aggressive transaction" refers to a transaction that may comply with the literal text of applicable standards but nonetheless violates applicable standards because, for example, it is devoid of economic substance. A key aim of those who advocate more principles-based standards for U.S. financial reporting standards and U.S. tax law is to discourage such transactions (Department of the Treasury, 1999; FASB, 2002; Joint Committee on Taxation, 2002; SEC, 2003).

The results indicated that accountants who prefer Thinking (i.e., more than 70% of accountants) may be more willing than accountants who prefer Feeling to approve an aggressive transaction under rules-based but not under principles-based standards. The results further indicated that this differential effect may be enhanced if an accountant prefers Sensing and Judging as well as Thinking (STJ). Nearly 40% of accountants are STJs. Also, accountants who prefer Judging (approximately 72% of accountants) may be more willing than accountants who prefer Perceiving to approve an aggressive transaction when potential professional penalties are relatively high but not when they are relatively low.

## BACKGROUND

**Cognitive Style.** "Cognitive style" refers to the combination of an individual's Perceiving (S–N) mental function, Judging (T–F) mental function, and Judging–Perceiving

(J–P) attitude, as measured by the MBTI instrument. Cognitive style pertains to the preferred methods of acquiring and processing information during the problem-solving process (Ho & Rodgers, 1993). Cognitive style measures do not involve labels that imply that one style is better than another. Analogous to right-handed versus left-handed, cognitive style is consistent over time, is not easily modified, and is not influenced by situational factors within a normal range of conditions (Ho & Rodgers). Studies that have examined the effect of accountants' cognitive styles on their judgment generally indicate that cognitive style is a significant factor (Fuller & Kaplan, 2004; Ho & Rodgers).

In this study, cognitive style was measured with the MBTI instrument, which is grounded in Jung's (1921) theory. In Jungian theory, there are two bipolar mental functions regarding the way individuals perceive and form judgments about the world: Perceiving (S–N) and Judging (T–F).

Jung's Perceiving mental function refers to the way a person determines what a problem or situation entails, and it encompasses information gathering, the seeking of sensation or of inspiration, and the selection of a stimulus to attend to when solving a problem. People who prefer Sensing tend to focus on individual elements and concrete facts and figures. They tend to be realistic and practical and are good at remembering and working with a large number of facts. People who prefer Intuition tend toward the theoretical and abstract and generally perceive problems as a whole. They tend to look at the big picture and try to grasp the essential patterns (Ho & Rodgers, 1993; Myers & Myers, 1995; Myers, McCaulley, Quenk, & Hammer, 2003; Wheeler, Hunton, & Bryant, 2004a).

Jung's Judging (T–F) mental function is a processing function that transforms data provided by the Perceiving (S–N) mental function in order to decide what action will be taken to solve a problem or resolve a situation. It encompasses evaluation, choice, decision-making, and the selection of a response after perceiving a stimulus. People who prefer Thinking tend to decide on the basis of potential logical consequences and rely on impartiality and neutrality concerning the personal desires and values of both themselves and the people who may be affected by the decision. People who prefer Feeling decide primarily on the basis of personal or social values and try to anticipate and take into account the effects of the decision at hand on the people involved (Ho & Rodgers, 1993; Myers & Myers,

1995; Myers et al., 2003; Wheeler et al., 2004a).

In Jungian theory, there are two bipolar attitudes that reflect an individual's fundamental views of the world: Extraversion–Introversion (E–I) and Judging–Perceiving (J–P). Jung's Extraversion–Introversion attitude pertains to whether one's attention is primarily directed at the external world of people and objects or the inner, subjective world of body and mind (Myers & Myers, 1995; Myers et al., 2003).

Jung's Judging–Perceiving (J–P) attitude pertains to one's attitudes or orientations toward dealing with the outside world. In any new activity, it is appropriate first to use the Perceiving mental functions to observe or take in the situation; then it is appropriate to use the Judging mental functions to decide on the appropriate action. Perceiving types typically remain longer in the observing attitude, because it is more comfortable and natural for them. They will often suspend judgment to take another look and stay attuned to incoming information. Their aim is to receive information as long as possible in an effort to miss nothing that might be important. Judging types move more quickly through perception in order to reach conclusions and achieve closure, as they are most comfortable and satisfied when a plan has been developed or when a decision has been made. They tend to shut off perception as soon as they have observed enough to make a decision. They are concerned with making decisions, seeking closure, planning operations, and organizing activities (Myers &

Myers, 1995; Myers et al., 2003).

Because people develop greater comfort and facility with their preferred mental functions and attitudes, individuals with different preferred mental functions and attitudes should differ in their information processing, judgment, learning, and communicating (Myers & Myers, 1995; Myers et al., 2003). However, non-preferred mental functions and attitudes are still present in the personality, and individuals may be quite competent using them. For example, a person who prefers Intuition may find that using the nonpreferred Sensing ability is the most effective way of handling important financial records (Myers et al.). Once preferred mental functions and attitudes are allowed to adequately develop to dominance, a general goal of development is to use each mental function and attitude for the tasks for which they are best suited.

The mental functions and attitudes and cognitive styles of the study participants, accountants, and the general U.S. population are presented in **TABLE 1**. The mental functions and attitudes interact to form the personality. Because of this interactive effect, a mental function or attitude in one type may have a different effect on the personality than the same mental function or attitude in another type. Combinations with a common mental function or attitude will share some qualities, but each combination has qualities all its own (Myers & Myers, 1995; Myers et al., 2003).

The most common combination for accountants

**Table 1. Mental Functions and Attitudes of Study Participants, Accountants, and the General U.S. Population (Percentages).**

	<b>I</b> (E)	<b>S</b> (N)	<b>T</b> (F)	<b>J</b> (P)	<b>STJ</b>
% Study Participants	<b>50.0</b> (50.0)	<b>61.3</b> (38.7)	<b>64.5</b> (35.5)	<b>59.7</b> (40.3)	<b>30.6</b>
Mean % Accounting Professional Studies (Kovar et al., 2003)	<b>51.9</b> (48.1)	<b>66.6</b> (33.4)	<b>70.5</b> (29.5)	<b>71.7</b> (28.3)	<b>39.1</b>
Mean % General U.S. Population* (Myers et al., 2003)	<b>50.7</b> (49.3)	<b>73.3</b> (26.7)	<b>40.2</b> (59.8)	<b>54.1</b> (45.9)	<b>20.3</b>
% Males**	54.1	71.7	56.5	52.0	27.6
% Females**	47.5	74.9	24.5	56.2	13.2

\*Mean % General U.S. Population by gender is presented below (Myers et al., 2003).

\*\*Mean % General U.S. Population differs materially by gender for Thinking versus Feeling and STJ versus nonSTJ.

(39.1%) of the perceiving mental function, the judging mental function, and the Judging–Perceiving attitude (cognitive style) is Sensing–Thinking–Judging (STJ) (Kovar, Ott, & Fisher, 2003). Individuals with an STJ cognitive style are well suited to many of the tasks performed by accountants (Myers & Myers, 1995). Kovar et al. (p. 92) suggested that the STJ cognitive style “may be something of a minimum requirement to successfully perform the tasks required by accountants” and observed that “the accountant’s primary strength, whether in public or private practice, remains collecting actual information from the events in a business (an inherently Sensing function), creating logical categorizations and aggregations (an inherently Thinking function), and finding ways to communicate it in an organized fashion and to use it to facilitate effective decisions (a function requiring an individual focused on Judging).”

#### **Rules-Based Versus Principles-Based Standards.**

The Securities and Exchange Commission (SEC, 2003), the Department of the Treasury (1999), and others view the recent wave of corporate accounting frauds and corporate tax shelters as being partly attributable to U.S. financial reporting standards and U.S. tax law being too rules-based. This has given rise to debate about whether U.S. financial reporting standards (Maines, Bartov, Fairfield, Hirst, Iannaconi, Mallett, et al., 2003) and U.S. tax law (Colliton, 1995) should be more principles-based.

A law requiring drivers to stop at a red light is rules-based, whereas a law requiring drivers to proceed cautiously through a blinking yellow light is principles-based. Rules-based standards establish legal boundaries based on the presence or absence of well-specified triggering facts. (E.g., did the car stop?) These standards are clear and easy to follow, are applied without regard to the substance of results but only with regard to the standard’s terms, and are opaque to the standard’s intent and purpose. Principles-based standards require evaluation by considering facts in light of one or more general questions. (E.g., how fast was the car going; what were the weather, road, and traffic conditions; and how much danger should the law tolerate?) These standards are vague, substantive, and transparent to the standard’s intent and purpose (Huhn, 2003; Korobkin, 2000; Sullivan, 1992).

In accounting, “rules versus principles” represents a continuum ranging from unequivocally rigid standards on one end to general definitions of economics-based

concepts on the other end (Maines et al., 2003). An example of unequivocally rigid standards is “Annual depreciation expense for all fixed assets is to be 10 percent of the original cost of the asset until the asset is fully depreciated.” An example of general definitions for economics-based concepts is “Depreciation expense for the reporting period should reflect the decline in the economic value of the asset over the period” (Maines et al., p. 74).

Studies indicate that accountants do not always interpret and apply either rules-based or principles-based standards as intended by standard setters. Standards with too few rules and vague, imprecise provisions may be interpreted inconsistently and reduce comparability between financial reports. However, standards with too many rules may give rise to complexity that hampers mental processing (Nelson, 2003). Nelson, Elliott, and Tarpley, (2002) and Spilker, Worsham, and Prawitt, (1999) indicated that both auditors and tax professionals are more aggressive under low precision standards in unstructured contexts (transactions not intentionally planned and entered into by management or taxpayers) but are more aggressive under high precision standards in structured contexts (transactions intentionally planned and entered into by management or taxpayers).

**Professional Penalties.** The willingness of both auditors (Hackenbrack & Nelson, 1996) and tax professionals (Roberts, 1998) to support aggressive, client-preferred positions is affected by their incentives, including potential professional penalties (Anderson & Cuccia, 2000; Roberts). However, because accountants may receive a psychological reward from beating the Internal Revenue Service or other tax agency, increasing professional penalties can cause accountants to increase their effort and produce a backlash effect (Cuccia, 1994).

**Expected Results.** In this study, “rules” refers to standards comprised of rules-based provisions with which an aggressive transaction does comply and abstract principles-based provisions with which an aggressive transaction does not comply, whereas “principles” refers to standards comprised only of abstract principles-based provisions with which an aggressive transaction does not comply. The aggressive transactions that have given rise to the “rules versus principles” debates have typically arisen in contexts in which applicable standards consist of abstract principles-based provisions on top of which have accreted rules-

based provisions (Colliton, 1995; Department of the Treasury, 1999; Nelson, 2003; SEC, 2003). The aggressive transactions typically comply with the accreted rules-based provisions but do not comply with the abstract principles-based provisions (Department of the Treasury; SEC). The intent and purpose of the applicable standards is typically apparent in the abstract principles-based provisions but not in the accreted rules-based provisions (Huhn, 2003). Current proposals to move to more principles-based standards would remove accreted rules-based provisions from standards, leaving only the abstract principles-based provisions (Department of the Treasury; SEC).

I expected Sensing accountants to be more aggressive than Intuitive accountants under both rules and principles, and that this difference would be greater under rules than under principles. I expected Ns to focus more on the abstract principles-based provisions with which aggressive transactions do not comply and to ground their judgment more on the holistic information needed to recognize that aggressive transactions do not comply with relevant standards. I expected the difference between Ss and Ns to be greater under rules than under principles because the rules-based provisions with which aggressive transactions do comply (present only under rules) would serve as a focal point for Ss and direct their attention to individual concrete facts.

I expected accountants who prefer Thinking to be more aggressive than accountants who prefer Feeling under rules but not necessarily under principles. I expected that under principles, Ts would be restrained by perceived potential negative consequences if they approve an aggressive transaction, whereas Fs would be restrained by their personal and social values from approving an aggressive transaction that does not accord with the intent and purpose of the principles-based provision. I expected that under rules, Fs would still be restrained by their personal and social values, but Ts would be more aggressive because they would believe that the rules-based provisions (present only under rules) would shield them from negative conse-

quences if they approved the aggressive transaction.

I expected accountants who prefer Judging to be more aggressive than accountants who prefer Perceiving under both rules and principles and thought that this difference would be greater under rules than under principles. I expected Perceiving types to spend longer perceiving the study scenario information and thus to view the facts in a more holistic fashion and to be more cognizant that the aggressive transaction does not comply with relevant standards. I expected the difference between Judging types and Perceiving types to be greater under rules than under principles because under rules Js would focus on the rules-based provision with which aggressive transactions do comply (present only under rules) and thus would spend even less time perceiving the study scenario.

When accountants perceive less chance of the applicability of professional penalties, the effect of the severity of the penalties should be reduced. Thus, I expected the effect of

potential profession penalty severity to be less for accountants who are less cognizant that an aggressive transaction does not comply with relevant standards (i.e., Ss as opposed to Ns and Js as opposed to Ps). I also expected the effect of potential professional penalty severity to be greater for accountants who are more focused on the logical consequences of approving an aggressive transaction (Ts as opposed to Fs).

## METHOD

The 62 participants were members of a state Certified Public Accountant society. Demographic statistics for the participants are presented in **TABLE 2 (PAGE 120)**.

The study used a 2 (manipulated rules vs. principles condition) x 2 (manipulated low potential professional penalty vs. high potential professional penalty condition) between-subjects design together with participants' measured preferences and whether or not the participant had an STJ cognitive style.

The data were collected using four websites, one for each study instrument condition. Each participant was directed to one of the websites. After completing

“  
Because people  
develop greater comfort  
and facility with their  
preferred mental  
functions and attitudes,  
individuals with  
different preferred  
mental functions and  
attitudes should differ  
in their information  
processing, judgment,  
learning, and  
communicating.”

**Table 2. Participant Demographics.**

Position		Years of Accounting Experience			Highest Degree Completed		Gender	
Position	n	Experience	Mean	(Std. Dev.)	Degree	n	Gender	n
Tax Compliance	29	Tax	16.7	(12.2)	Bachelor's Accountancy	22	Male	42
Audit	15	Audit	9.3	(11.2)	Master's Accountancy	10	Female	19
Other	9	Other Accounting	9.5	(12.9)	Not Indicated	9	Not Indicated	1
Tax Planning	7				Bachelor's Other	8		
Not Indicated	2				Bachelor's Business	6		
					Master's Tax	3		
					Master's Business Admin.	2		
					Master's Other	2		

the study instrument (available from the author upon request), participants were directed to the study questionnaire, which asked manipulation checks, questions related to the study instrument, questions related to the control variables, and demographic questions. Participants were then directed to the commercial website for CPP, Inc. (the providers of the MBTI instrument), where they completed the MBTI (Form M) instrument. Researchers have extensively validated and tested the reliability of the MBTI measure (Myers et al., 2003; Wheeler, 2001; Wheeler et al., 2004a, 2004b).

The participants were presented with a scenario in which an insurance company client wishes to engage in an aggressive transaction plan to reduce its state insurance gross premiums tax ("plan"). In the scenario, the client wishes to lower its gross premiums tax on employee group health insurance plans by having employers (rather than the actual insurance company client) "pay" employee claims for up to 80% of the actuarially predicted monthly mean level of aggregate employee claims, thus lowering the amount of premiums "received" by the client. In an actual case involving a materially less aggressive plan of this type, the Supreme Court of California concluded that in economic substance the employers were mere agents of the insurance company for collection of employee premiums, not independent insurers, and thus held the insurance company taxable on the sum of the premium payments it received from the employers and the pre-trigger point claims paid from employer funds during the years in question (*Metropolitan Life Insurance Company v. State Board of Equalization*, Supreme Court

of California, 1982). To minimize the potential effects of social influences such as pressure from firm superiors, the scenario asked participants to assume that they practiced as the sole owner of a small accounting firm.

For the dependent variable ("AGGRESSIVE"), participants were asked to indicate using an 11-point (0% to 100%) Likert scale whether in exchange for a lucrative fee they would provide a written opinion stating that the "plan" would be upheld if challenged by the pertinent regulatory authority ("approve an aggressive transaction").

The first independent variable ("RvP") was a manipulated dichotomous variable pertaining to whether participants were assigned to the rules condition or the principles condition. The second independent variable ("SN") was a continuous variable pertaining to participants' Sensing versus Intuition preference (range from -30 for Sensing to +30 for Intuition). The third independent variable ("TF") was a continuous variable pertaining to participants' Thinking versus Feeling preference (range from -30 for Thinking to +30 for Feeling). The fourth independent variable ("JP") was a continuous variable pertaining to participants' Judging versus Perceiving attitudes or orientations (range from -30 for Judging to +30 for Perceiving). A dichotomous independent variable ("STJ") indicating whether a participant had a Sensing-Thinking-Judging cognitive style was also examined.

The fifth independent variable ("PENALTY") was a manipulated dichotomous variable pertaining to the level of potential professional penalties (low [\$250] or high [three times the fee obtained for the opinion]).

AUDIT, as measured using the participants' responses to a question in the study instrument (assessed % likelihood of audit if the client engaged in the proposed aggressive transaction), was included in the control variable. One participant did not respond to the AUDIT question. The mean of the AUDIT question answers for the other participants was used for AUDIT for this participant.

## RESULTS

**Descriptive Statistics.** Descriptive statistics for the dependent variable, measured independent variables, and control variable are presented in TABLE 3.

**Statistical Adjustments.** I transformed the values of the dependent variable (AGGRESSIVE) using a square root transformation (Maxwell & Delaney, 2000) and centered all of the continuous independent variables (Jaccard & Turrisi, 2003). All results are reported using nonstandardized coefficients, and all reported  $p > t$  for  $t$  values pertained to two-tailed  $t$  tests. RvP was coded using "0" for the principles condition and "1" for the rules condition. PENALTY was coded using "0" for the low penalty condition and "1" for the high penalty condition. The composite STJ variable was coded using "0" for nonSTJ participants and "1" for STJ participants.

**Cognitive Style and Standard Precision.** Sensing accountants were expected to be more aggressive than Intuitive accountants under both rules and principles, and this difference was expected to be greater under rules than under principles. Contrary to expectations, Ss were less aggressive than Ns under both rules (mean response to AGGRESSIVE of 15.79% for Ss and 23.33% for Ns) and principles (mean response to AGGRESSIVE

of 8.95% for Ss and 12.50% for Ns). S–N was not significant under rules ( $p < .29$ ) or under principles ( $p < .62$ ) and did not interact significantly with standard precision (RvP) ( $p < .27$ )

Accountants who prefer Thinking were expected to be more aggressive than accountants who prefer Feeling under rules but not necessarily under principles. Actually, Ts were slightly (3.73%) less aggressive than Fs under principles, but T–F was not significant under principles ( $p < .68$ ). Consistent with expectations, Ts were 7.86% more aggressive than Fs under rules, and T–F was significant under rules ( $b_1 = -0.09$ ,  $p < .05$ ). Consistent with expectations, T–F showed a marginally significant interaction with standard precision (RvP) ( $p < .07$ ). See TABLE 4 (PAGE 122).

Under principles, both Ts and Fs exhibited little aggressiveness (mean response to AGGRESSIVE of 9.00% for Ts and 12.73% for Fs). Fs were not materially more aggressive under rules than under principles (increase in mean response to AGGRESSIVE of only 0.91%), probably because the abstract principles-based provision (present under both rules and principles) still indicated that the aggressive transaction was not in accord with the intent and purpose of relevant standards. However, Ts were materially more aggressive under rules than under principles (increase in mean response to AGGRESSIVE of 12.50%) probably because they believed that the rules-based provision (present only under rules) would shield them from negative consequences if they approved the aggressive transaction.

Accountants who prefer Judging were expected to be more aggressive than accountants who prefer Perceiving under both rules and principles, and this difference was expected to be greater under rules than under principles. Consistent with expectations, Js were approximately 12.50% more aggressive than Ps under both rules (mean response to AGGRESSIVE of 23.89% for Js and 11.54% for Ps) and principles (mean response to AGGRESSIVE of 15.26% for Js and 2.50% for Ps). Consistently, J–P was negatively correlated with AGGRESSIVE ( $r[60] = -.23$ ,  $p < .07$ ), and a  $t$ -test indicated a significant difference between Judging types and Perceiving types (with RvP collapsed) for AGGRESSIVE ( $p < .04$ ). However, J–P did not interact significantly with standard precision (RvP) ( $p < .73$ ) as expected. Under both rules and principles, Ps probably spent longer perceiving the study scenario information and thus viewed the facts in a more holistic fashion and were more aware (than were Js) that the aggressive

**Table 3. Descriptive Statistics.**

Variable	Mean	(Std. Dev.)
<b>Dependent Variable</b>		
AGGRESSIVE (0 to 100 scale)	14.52	(25.46)
<b>Independent Variables</b>		
S–N (-30 to 30 scale)	-7.35	(15.78)
T–F (-30 to 30 scale)	-6.87	(14.31)
J–P (-30 to 30 scale)	-8.65	(16.29)
<b>Control Variable</b>		
AUDIT (0 to 100 scale)	94.26	(13.11)

**Table 4. Effect of Thinking Versus Feeling Judging Mental Function on Aggressiveness Under Rules Versus Principles.**

Mean (std. dev.) for AGGRESSIVE, RvP by T-F

	Thinking	Feeling
<b>Principles</b>	9.00 (20.49) <i>n</i> = 20	12.73 (25.73) <i>n</i> = 11
<b>Rules</b>	21.50 (29.07) <i>n</i> = 20	13.64 (26.93) <i>n</i> = 11

ANCOVA—T-F parameter estimate pertains to rules condition (Jaccard &amp; Turrisi, 2003):

$$\text{AGGRESSIVE} = b_0 + b_1\text{TF} + b_2\text{RvP} + b_3\text{TF}*\text{RvP} + b_4\text{PENALTY} + b_5\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 6.5828$	2.8096	2.34	.0227
TF	$b_1 = -0.0855$	0.0429	-2.04	.0460
RvP	$b_2 = -0.8220$	0.7642	-1.08	.2868
TF*RvP	$b_3 = 0.0998$	0.0542	1.84	.0705
PENALTY	$b_4 = 2.0471$	0.7685	2.66	.0101
AUDIT	$b_5 = -0.0527$	0.0299	-1.76	.0839
$R^2 = .204009$				

Source	DF	Mean Square	F value	Pr > F
Model	5	24.8770	2.87	.0224
Error	56	8.6664		
Corrected Total	61			

ANCOVA—T-F parameter estimate pertains to principles condition (Jaccard &amp; Turrisi, 2003):

$$\text{AGGRESSIVE} = b_0 + b_1\text{TF} + b_2\text{RvP} + b_3\text{TF}*\text{RvP} + b_4\text{PENALTY} + b_5\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 5.7609$	2.9175	1.97	.0533
TF	$b_1 = 0.0143$	0.0350	0.41	.6832
RvP	$b_2 = 0.8220$	0.7642	1.08	.2868
TF*RvP	$b_3 = -0.0998$	0.0542	-1.84	.0705
PENALTY	$b_4 = 2.0471$	0.7685	2.66	.0101
AUDIT	$b_5 = -0.0527$	0.0299	-1.76	.0839
$R^2 = .204009$				

Source	DF	Mean Square	F value	Pr > F
Model	5	24.8770	2.87	.0224
Error	56	8.6664		
Corrected Total	61			

AGGRESSIVE = participants' assessed likelihood of whether they would approve an aggressive transaction (measured using an 11-point Likert scale), transformed by the square root transformation for ANCOVAs.

TF = participants' Judging mental function preference measured using the MBTI instrument (range from -30 for Thinking to +30 for Feeling).

RvP = manipulated condition rules-based standards versus principles-based standards.

PENALTY = manipulated condition low (\$250) versus high (three times the fee obtained for the opinion) potential professional penalty.

AUDIT = participants' assessed % likelihood of audit if the client engaged in the proposed aggressive transaction.

transaction did not comply with the abstract principles-based provision (present under both rules and principles).

STJs (the most prevalent cognitive styles of accountants) were 2.02% less aggressive than nonSTJs under principles but were 15.19% more aggressive than nonSTJs under rules. STJ was significant under rules ( $p < .01$ ) but not under principles ( $p < .59$ ), and the interaction of STJ and RvP was significant ( $p < .03$ ). See **TABLE 5 (PAGE 124)**.

Under both rules and principles, the mean response to AGGRESSIVE for nonSTJs differed by less than 2% from the mean response for Fs. Under principles, the mean response to AGGRESSIVE for STJs differed by only approximately 0.1% from the mean response for Ts, whereas under rules the mean response to AGGRESSIVE for STJs was 7.50% higher than the mean response for Ts (29.00% for STJs vs. 21.50% for Ts). Thus, the differential effect of the Judging mental function between rules and principles may be enhanced if a T is also an S and a J. Such enhancement would be consistent with Jungian theory.

With respect to the Perceiving mental function, if Ss focus more than Ns on the rules-based provision present only under rules (as expected in the hypotheses), this would enhance the effect of Ts believing that this provision would shield them from negative consequences if they approved the aggressive transaction. Considering the Judging–Perceiving attitude, under both rules and principles, Ps probably spent longer perceiving the study scenario information and thus were more cognizant (than Judging types) that the aggressive transaction did not comply with the abstract principles-based provision (present under both rules and principles). However, it is likely that this effect was greatest for Ts under rules, because Judging types most quickly ceased perception if they were focused on potential logical consequences and believed that the rules-based provision (present only under rules) would shield them from negative consequences if they approved the aggressive transaction.

**Cognitive Style and Potential Professional Penalty Severity.** Both accountants who prefer Sensing (mean response to AGGRESSIVE of 2.50% for low PENALTY and 23.33% for high PENALTY) and accountants who prefer Intuition (mean response to AGGRESSIVE of 15.00% for low PENALTY and 20.83% for high PENALTY) were more aggressive when potential professional penalty severity was heightened. Both Thinking accountants (mean response to AGGRESSIVE of 9.55%

for low PENALTY and 22.22% for high PENALTY) and Feeling accountants (mean response to AGGRESSIVE of 2.00% for low PENALTY and 22.50% for high PENALTY) were more aggressive when potential professional penalty severity was heightened. S–N did not interact significantly with PENALTY ( $p < .30$ ), and T–F did not interact significantly with PENALTY ( $p < .86$ ).

Perceiving types were only slightly (1.75%) more aggressive when potential professional penalty severity was heightened. However, Js were 22.75% more aggressive when potential professional penalty was heightened. Further, Js were only 1.35% more aggressive than Ps when potential professional penalties were low but were 22.35% more aggressive when potential professional penalties were high. J–P interacted significantly with PENALTY ( $p < .04$ ) and was significant when PENALTY was high ( $b_1 = -.010$ ,  $p < .01$ ) but not when PENALTY was low ( $p < .90$ ). See **TABLE 6 (PAGE 125)**.

I did not locate any material pertaining to Jungian theory that would explain these results. It is possible that Js were made to feel uncomfortable by a high potential professional penalty and quickly ceased the perception needed to accurately grasp the nature of the aggressive transaction. However, this is just speculation.

Both STJs (mean response to AGGRESSIVE of 5.56% for low PENALTY and 32.00% for high PENALTY) and nonSTJs (mean response to AGGRESSIVE of 7.83% for low PENALTY and 17.50% for high PENALTY) were more aggressive when potential professional penalty severity was heightened. STJ did not interact significantly with PENALTY ( $p < .42$ ).

## CONCLUSION

Accountants' judging mental function (T–F) interacted marginally significantly with standards precision and was significant under rules but not under principles, with Thinking accountants under rules exhibiting greater aggressiveness (21.50% mean chance of approving an inappropriately aggressive transaction vs. 9.00%, 12.73%, and 13.64%). This differential effect of the Judging mental function was enhanced if the Thinking accountant was also an S and a J (STJ) (29.00% mean chance of approving an inappropriately aggressive transaction for STJs vs. 21.50% chance of doing so for Ts). Although 40.2% of the general U.S. population are Ts, 70.5% of accounting professionals are Ts. Although 20.3% of the general U.S. population are STJs, 39.1% of accounting professionals are STJs, and the STJ cognitive combination is the most prevalent one for account-

**Table 5. Effect of Sensing–Thinking–Judging (STJ) on Aggressiveness Under Rules Versus Principles.**

## Mean (std. dev.) for AGGRESSIVE, RvP by STJ

	STJ	Not STJ
Principles	8.89 (23.15) <i>n</i> = 9	10.91 (22.23) <i>n</i> = 22
Rules	29.00 (32.13) <i>n</i> = 10	13.81 (25.39) <i>n</i> = 21

ANCOVA—STJ parameter estimate pertains to rules condition (Jaccard, 1998):

$$\text{AGGRESSIVE} = b_0 + b_1\text{STJ} + b_2\text{RvP} + b_3\text{STJ}^*\text{RvP} + b_4\text{PENALTY} + b_5\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 5.5493$	2.6955	2.06	.0442
STJ	$b_1 = 2.9181$	1.1275	2.59	.0123
RvP	$b_2 = 0.3341$	0.9093	0.37	.7147
STJ*RvP	$b_3 = -3.5481$	1.6086	-2.21	.0315
PENALTY	$b_4 = 1.9806$	0.7466	2.65	.0104
AUDIT	$b_5 = -0.0519$	0.0290	-1.79	.0795
$R^2 = .237440$				

Source	DF	Mean Square	F value	Pr > F
Model	5	28.9536	3.49	.0082
Error	56	8.3024		
Corrected Total	61			

ANCOVA—STJ parameter estimate pertains to principles condition (Jaccard, 1998):

$$\text{AGGRESSIVE} = b_0 + b_1\text{STJ} + b_2\text{RvP} + b_3\text{STJ}^*\text{RvP} + b_4\text{PENALTY} + b_5\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 5.8834$	2.8406	2.07	.0430
STJ	$b_1 = -0.6300$	1.1503	-0.55	.5861
RvP	$b_2 = -0.3341$	0.9093	-0.37	.7147
STJ*RvP	$b_3 = 3.5481$	1.6086	2.21	.0315
PENALTY	$b_4 = 1.9806$	0.7466	2.65	.0104
AUDIT	$b_5 = -0.0519$	0.0290	-1.79	.0795
$R^2 = .237440$				

Source	DF	Mean Square	F value	Pr > F
Model	5	28.9536	3.49	.0082
Error	56	8.3024		
Corrected Total	61			

AGGRESSIVE = participants' assessed likelihood of whether they would approve an aggressive transaction (measured using an 11-point Likert scale), transformed by the square root transformation for ANCOVAs.

STJ = whether participants indicated as Sensing–Thinking–Judging per the MBTI instrument (dichotomous).

RvP = manipulated condition rules-based standards versus principles-based standards.

PENALTY = manipulated condition low (\$250) versus high (three times the fee obtained for the opinion) potential professional penalty.

AUDIT = participants' assessed % likelihood of audit if the client engaged in the proposed aggressive transaction.

**Table 6. Effect of Judging Versus Perceiving Attitude or Orientation Toward the Outer World on Aggressiveness Under Differing Potential Professional Penalty Severity.**

Mean (std. dev.) for AGGRESSIVE, PENALTY by JP

	Judging	Perceiving
High Penalty	30.53 (34.40) <i>n</i> = 19	8.18 (15.37) <i>n</i> = 11
Low Penalty	7.78 (15.55) <i>n</i> = 18	6.43 (19.06) <i>n</i> = 14

ANCOVA—JP parameter estimate pertains to low penalty condition (Jaccard & Turrissi, 2003):

$$\text{AGGRESSIVE} = b_0 + b_1\text{JP} + b_2\text{Penalty} + b_3\text{JP*PENALTY} + b_4\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 5.9111$	2.7042	2.19	.0329
JP	$b_1 = 0.0038$	0.0301	0.13	.8998
PENALTY	$b_2 = 1.9802$	0.7316	2.71	.0089
JP*PENALTY	$b_3 = -0.0992$	0.0460	-2.16	.0353
AUDIT	$b_4 = -0.0497$	0.0283	-1.75	.0846
$R^2 = .227058$				
Source	DF	Mean Square	F value	Pr > F
Model	4	34.6095	4.19	.0048
Error	57	8.2678		
Corrected Total	61			

ANCOVA—JP parameter estimate pertains to high penalty condition (Jaccard & Turrissi, 2003):

$$\text{AGGRESSIVE} = b_0 + b_1\text{JP} + b_2\text{Penalty} + b_3\text{JP*Penalty} + b_4\text{AUDIT} + e$$

Parameter	Est. Unstd. b	Std. Error	t value	Pr > t
Intercept	$b_0 = 7.8913$	2.7363	2.88	.0055
JP	$b_1 = -0.0954$	0.0346	-2.76	.0078
PENALTY	$b_2 = -1.9802$	0.7316	-2.71	.0089
JP*PENALTY	$b_3 = 0.0992$	0.0460	2.16	.0353
AUDIT	$b_4 = -0.0497$	0.0283	-1.75	.0846
$R^2 = .227058$				
Source	DF	Mean Square	F value	Pr > F
Model	4	34.6095	4.19	.0048
Error	57	8.2678		
Corrected Total	61			

AGGRESSIVE = participants' assessed likelihood of whether they would approve an aggressive transaction (measured using an 11-point Likert scale), transformed by the square root transformation for ANCOVAs.

JP = participants' Judging–Perceiving attitude preference measured using the MBTI instrument (range from –30 for Judging to +30 for Perception).

PENALTY = manipulated condition low (\$250) versus high (three times the fee obtained for the opinion) potential professional penalty.

AUDIT = participants' assessed % likelihood of audit if the client engaged in the proposed aggressive transaction.

ing professionals. Thus, this study provides evidence that inappropriate aggressiveness by accountants may in part be the result of their cognitive style in tandem with predominantly rules-based U.S. financial reporting standards and U.S. tax law.

Accountants' Judging–Perceiving attitude interacted significantly with potential professional penalty severity and was significant under high severity but not under low severity, with Judging type accountants under

high severity exhibiting greater aggressiveness (30.53% mean chance of approving an inappropriately aggressive transaction vs. 6.43%, 7.78%, and 8.18%). Although 54.1% of the general U.S. population are Js, 71.7% of accounting professionals are Judging types. Thus, this study provides evidence that inappropriate aggressiveness by accountants may in part be the result of their cognitive style in tandem with heightened professional penalty severity.

## REFERENCES

- Anderson, S. E., & Cuccia, A. D. (2000). A closer examination of the economic incentives created by tax return preparer penalties. *Journal of American Taxation Association*, 22, 56–77.
- Colliton, J. W. (1995). Standards, rules, and the decline of the courts in the law of taxation. *Dickinson Law Review*, 99, 265–329.
- Cuccia, A. D. (1994). The effects of increased sanctions on paid tax preparers: Integrating economic and psychological factors. *Journal of the American Taxation Association*, 16, 41–66.
- Department of the Treasury. (1999). *The problem of corporate tax shelters: Discussion, analysis and legislative proposals*. Retrieved from <http://www.treas.gov/press/releases/reports/ctswwhite.pdf>
- Financial Accounting Standards Board (FASB). (2002). *Proposal: Principles-based approach to U.S. standard setting* (File Reference No. 1125–001). Norwalk, CT: FASB.
- Fuller, L. R., & Kaplan, S. E. (2004). A note about the effect of auditor cognitive style on task performance. *Behavioral Research in Accounting*, 16, 131–143.
- Hackenbrack, K., & Nelson, M. W. (1996). Auditors' incentives and their application of financial accounting standards. *The Accounting Review*, 71, 43–59.
- Ho, J. L., & Rodgers, W. (1993). A review of accounting research on cognitive characteristics. *Journal of Accounting Literature*, 12, 101–130.
- Huhn, W. (2003). The stages of legal reasoning: Formalism, analogy, and realism. *Villanova Law Review*, 48, 305–380.
- Jaccard, J. (1998). *Interaction effects in factorial analysis of variance*. Thousand Oaks, CA: Sage Publications, Inc.
- Jaccard, J., & Turrisi, R. (2003). *Interaction effects in multiple regression* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Joint Committee on Taxation. (2002). *Background and present law relating to tax shelters*. Retrieved from <http://www.house.gov/jct/x-19-02.pdf>
- Jung, C. G. (1921). *Psychological types*. Princeton, NJ: Princeton University Press.
- Korobkin, R. B. (2000). Behavioral analysis and legal form: Rules vs. standards revisited. *Oregon Law Review*, 79, 23–58.
- Kovar, S. E., Ott, R. L., & Fisher, D. G. (2003). Personality preferences of accounting students: A longitudinal case study. *Journal of Accounting Education*, 21, 75–94.
- Maine, L. A., Bartov, E., Fairfield, P., Hirst, D. E., Iannocini, T. E., Mallett, R., et al. (2003). Evaluating concepts-based vs. rules-based approaches to standard setting. *Accounting Horizons*, 17, 73–89.
- Maxwell, S. E., & Delaney, H. D. (2000). *Designing experiments and analyzing data: A model comparison perspective*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Metropolitan Life Insurance Company v. State Board of Equalization*. (1982). 186 Cal Rptr. 578, 32 Cal. 3d 649, 652 P2d 426.
- Myers, I. B., with Myers, P. B. (1995). *Gifts differing: Understanding personality type* (2nd ed.). Palo Alto, CA: Davies-Black.
- Myers, I. B., McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (1998). *MBTI Manual: A guide to the development and use of the Myers-Briggs Type Indicator* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Nelson, M. W. (2003). Behavioral evidence on the effects of principles- and rule-based standards. *Accounting Horizons*, 17, 91–104.
- Nelson, M. W., Elliott, J. A., & Tarpley, R. L. (2002). Evidence from auditors about managers' and auditors' earnings management decisions. *The Accounting Review*, 77, 175–202.
- Roberts, M. L. (1998). Tax accountants' judgment/decision-making research: A review and synthesis. *Journal of the American Taxation Association*, 20, 78–121.
- Securities and Exchange Commission (SEC). (2003). *Study pursuant to section 108(d) of the Sarbanes-Oxley Act of 2002 on the adoption by the U.S. financial reporting system of a principles-based accounting system*. Retrieved from <http://www.sec.gov/news/studies/principlesbasedstand.htm>
- Spilker, B. C., Worsham, R. G., Jr., & Prawitt, D. F. (1999). Tax professionals' interpretations of ambiguity in compliance and planning decision contexts. *Journal of the American Taxation Association*, 21, 75–89.
- Sullivan, K. M. (1992). The justices of rules and standards. *Harvard Law Review*, 22, 22–123.
- Wheeler, P. (2001). The Myers-Briggs Type Indicator and applications to accounting education and research. *Issues in Accounting Education*, 16, 125–150.
- Wheeler, P., Hunton, J. E., & Bryant, S. M. (2004a). Accounting information systems research opportunities using personality type theory and the Myers-Briggs Type Indicator. *Journal of Information Systems*, 18, 1–19.
- Wheeler, P., Hunton, J. E., & Bryant, S. M. (2004b). Authors' reply to commentary on accounting information systems research opportunities using personality type theory and the Myers-Briggs Type Indicator. *Journal of Information Systems*, 18, 35–38.

**Beth Stetson** received her B.B.A. degree in accounting from the University of Oklahoma in 1985, her J.D. from the University of Oklahoma in 1988, her M.S. in tax from Golden Gate University in 1995, and her Ph.D. in accounting from the University of Oklahoma in 2006. Before entering academia, she practiced law for approximately 10 years as a Senior Trial Attorney and International Attorney for the Internal Revenue Service and as a Manager for PricewaterhouseCoopers. Stetson was admitted to the State Bar of California in 1989 and granted a C.P.A. license in Illinois in 1990. In 2007, she won the Isabel Briggs Myers Memorial Research Award for Outstanding Research in the Field of Psychological Type. She is currently employed as an Assistant Professor of Accounting at Oklahoma City University.

#### CONTACT

Beth Stetson  
104 E Symmes  
Norman, OK 73069  
405.833.5308  
tstetson@okcu.edu  
Oklahoma City University

This *Journal* is being made available through the collaborative efforts of Dr. Tom Carskadon, Editor of the *Journal of Psychological Type*, and the Center for Applications of Psychological Type, Inc., CAPT, worldwide publisher. Dr. B. Michael Thorne serves as Executive Editor of the *Journal of Psychological Type*.

*Journal of Psychological Type* is a trademark or registered trademark of Thomas G. Carskadon in the United States and other countries.

CAPT is a not-for-profit organization dedicated to the meaningful application and ethical use of psychological type as measured through the Myers-Briggs Type Indicator instrument.

Myers-Briggs Type Indicator, Myers-Briggs, and MBTI are trademarks or registered trademarks of the Myers-Briggs Type Indicator Trust in the United States and other countries.

Center for Applications of Psychological Type, Inc. and CAPT are trademarks or registered trademarks of the Center for Applications of Psychological Type in the United States and other countries.

Copyright © 2007 by Thomas G. Carskadon, Editor.

ISSN 0895-8750.