

“Although 360-degree performance evaluations of managers show significant levels of overall agreement by boss, employees, peers, and self, the relationships of managers’ evaluations to their personality types vary widely by skill type and observer group, and only SJ managers’ task-related skills are recognized by all groups.”

## The Relationship Between Personality Type and 360-degree Evaluation of Management Skills

**Nancy M. Schullery**

Western Michigan University

**Stephen E. Schullery**

Eastern Michigan University

**Paul Knudstrup**

Midwest Consulting Group, Inc., Kalamazoo, MI

**Lawrence A. Pfaff**

Spring Arbor University

### ABSTRACT

The relationship between managers’ MBTI®-based personality type and their 360-degree evaluations based on the Management–Leadership Practices Inventory (MLPI) was examined. Correlations were computed between managers’ memberships in 52 personality type groups and their scores on 20 essential managerial skills, average skill scores, and people-related and task-related factor scores—all assessed by boss, employees, peers, and self. Among the many relationships observed was the unanimous positive evaluation of SJ managers’ task-

factor skills by their bosses, employees, and peers. ENP and ENFP managers were also rated positively overall and on the people factor by their peers. In contrast, SP managers were rated negatively overall and on the task factor by their peers, and ISTP managers received negative overall ratings by both peers and employees. NJ, INJ, and ESFP managers received negative ratings by their bosses either overall or on the task factor. In several cases, change of a single letter could shift the group from a negative to a positive category: NJs to SJs, ISTPs

to ISTJs, and ESFPs to ENFPs. There was no relationship with the E–I preference.

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

Multisource performance reviews, or so-called 360-degree evaluations, have been used since the 1970s and are an important development in modern business practice. In contrast to traditional one-way performance reviews by a person's supervisor, 360-degree evaluations provide feedback from all directions—supervisor, employees, peer coworkers, and the subject him- or herself—and are directed toward the individual's development for better performance rather than directed toward assessment for pay raises or promotion. The distinction is sharpest when the 360-degree feedback process requires anonymity for evaluators and confidential presentation of the feedback only to the evaluatee. There is extensive literature describing the design, challenges, and implementation of customized 360-degree evaluations, and hundreds of 360-degree instruments are commercially available (Bracken, Timmreck, & Church, 2001; Church & Bracken, 1997; Edwards & Ewen, 1996; Peiperl, 2005; Tornow & London, 1998).

Over the past 14 years, we have used one of the commercially available instruments, the Management-Leadership Practices Inventory (MLPI) (Pfaff & Associates, 1989; Pfaff & Associates, 2002) along with the *Myers-Briggs Type Indicator*® (MBTI®) instrument as part of management courses or workshops in manufacturing, service, and nonprofit entities, as well as in university-based open enrollment management programs. Although the MBTI instrument and 360-degree instruments such as the MLPI were constructed with quite different goals, they provide valuable complementary sets of information about workplace performance (e.g., Ludeman, 1995). The MBTI instrument characterizes a person's innate preferences regarding dealing with ideas, people, the external world, new information, and decisions (Myers, McCaulley, Quenk, & Hammer, 1998), whereas the MLPI characterizes the person's observed behaviors. The model is that the preferences are to some extent responsible for the behavior. For example, Haley (1997) reviewed theory and research linking managers' personality types with the heuristics and "cognitive trails" that they use in making decisions.

Many applications of the MBTI instrument in the organization and workplace have been described

(de Charon, 2003; Hammer, 1996; Huszczo, 1996; Kroeger & Thuesen, 1992; Myers et al., 1998; Nutt, 1989), including the effects of personality type on likely improvement as a result of 360-degree feedback (Maes, 2003; Roush, 1997; Weissman, 1999). Van Velsor and Fleenor (1997) reviewed studies of the links between the MBTI instrument and four different 360-degree instruments, and Sundstrom and Busby (1997) described MBTI-linked differences in coworkers' perceptions of leaders using Bales' (1983) SYMLOG, or Systematic Multiple-Level Observation of Groups, instrument. However, none of those studies used the full circle of rater perspectives (self, peers, subordinates, boss), and their analyses were largely limited to effects of the four MBTI dichotomies or of full types.

The present study investigated the specific domains of overlap of the MBTI typology with multi-perspective assessments of managerial skills as measured by the MLPI instrument. In addition to investigating a different 360-degree instrument, prior research was extended by exploring the roles of the MBTI's four dichotomous preference scales, the 16 complete types, the 8 Jungian types, the 4 dominant types, and the other pairs and temperaments represented in the MBTI type table. Two general research questions were asked: Which of the various MBTI instrument scales and preference groupings are correlated with observed managerial skills? How consistent are those relationships across evaluator groups having quite different workplace perspectives? The answers to these questions would be valuable to management educators, trainers, and consultant practitioners.

## METHOD

**The MLPI Instrument.** The MLPI instrument performs 360-degree assessments of an individual's management and leadership skills, understanding the perceptions of team members, and helping managers improve their professional success. It consists of 85 "This manager . . ." statements, each scored on a 7-point scale ranging from "never" to "always" (Pfaff & Associates, 1989). These items are grouped into 20 management-practice behaviors, each scored as the average score of its component items. The content validity, face validity, reliability, and independence of the 20 factors have been demonstrated (Pfaff, 1995). For training purposes in the field, the behaviors are grouped into the following three categories (although an alternative organization is developed in the present study):

- Interpersonal style, or how a person implements management and leadership practices on a daily basis:
  - Approachable
  - Directive
  - Participative
- Practices recognized as essential to effective management and supervision in the workplace:
  - Goal setting
  - Planning and organizing
  - Technical expertise
  - Performance standards
  - Coaching
  - Evaluating performance
  - Facilitating change
  - Delegation
  - Recognition
- Leadership practices beyond basic supervision, such as getting a unit to work together effectively as a group:
  - Strategy
  - Communication
  - Teamwork
  - Empowering employees
  - Trust
  - Resourcefulness
  - Self-confidence
  - Decisiveness

The MLPI instrument is available in both Internet and paper-based formats, and, since its introduction in 1987, has been used by over 25,000 managers and executives in over 300 organizations of all types.

**Sample and Data.** The sample consisted of 423 managers (80% men) from 8 intact, organization-specific management teams and 22 university-based management and executive development programs, with each of the latter representing 15 to 20 different organizations. Participants came from a wide variety of geographic regions and types of organizations, with about 10% being from non-U.S. organizations and locations. Sixty-five percent of the managers were participants in two major university-based weeklong management development programs and represented a broad cross section of organizations and industry types. Of the remainder, 23% were from manufacturing companies; 9% from nonprofit, government, or educational organizations; 1% from agricultural organizations; and

1% from retail stores. Participant ages varied from mid-20s to mid-60s. Organizational levels ranged from first-line supervisors to CEOs, with the bulk of the participants being mid-level managers in medium to large organizations.

MLPI evaluations were completed by each manager's boss (immediate supervisor), employees, peers, and self. To obtain reliable results and assure anonymity, we required at least three responses each from employees and peers. In the field, insufficient Employee and Peer data are combined into a new category called Others; however, such pooled data (12.7% of the sample) were excluded case wise from the present analysis. The MBTI data were gathered using either Form G, Form G Self-Scored, or Form M and are summarized in **TABLE 1**.

**Data Analysis.** We viewed membership in the type groupings of **TABLE 1** as 52 dichotomous independent variables, and the 20-item MLPI scores assigned by each of the four evaluator groups as 80 continuous dependent variables. Clearly, some data reduction was desirable; thus, exploratory factor analysis was performed on each of the four MLPI data sets: Boss, Employees, Peers, and Self. Principal components analysis followed by varimax rotation with Kaiser normalization returned two factors with eigenvalues greater than one for the Boss, Employee, and Peer data sets, accounting for 71% to 78% of variance, and three factors for the Self data set, accounting for 59% of variance. Although the two-factor solutions were not identical, they were sufficiently similar and meaningful to support further analysis. These factors are shown in **TABLE 2**, with the variables listed in decreasing order of importance (loading). The average maximum loading was .84 ( $SD = 0.04$ ) and the average minimum loading was .62 ( $SD = 0.05$ ).

Although there were some ambiguities, the differing nature of the factors' variable sets was evident upon inspection: The variables in the first factor seemed to share interpersonal or people-related skills, whereas the variables in the second factor seemed to share relevance to focusing on or accomplishing the task. Similarly named pairs of contrasting dimensions have been found in numerous prior studies coming from a variety of management, leadership, teamwork, and communication perspectives. For example, the Ohio State University Leadership Studies in the 1950s narrowed a list of nine key behaviors to just two—relationship and task—that accounted for more than 80% of the variation in follow-

Table 1. Type Distribution for All Managers.

The Sixteen Complete Types				Dichotomous Preferences				
ISTJ <i>n</i> = 87 (20.6%) +++++ +++++ +++++ +++++ +	ISFJ <i>n</i> = 18 (4.3%) ++++	INFJ <i>n</i> = 11 (2.6%) +++	INTJ <i>n</i> = 30 (7.1%) +++++ ++	E	216	(51.1%)		
				I	207	(48.9%)		
				S	250	(59.1%)		
				N	173	(40.9%)		
				T	332	(78.5%)		
				F	91	(21.5%)		
				J	275	(65.0%)		
				P	148	(35.0%)		
The Sixteen Complete Types				Pairs and Temperaments				
ISTP <i>n</i> = 18 (4.3%) ++++	ISFP <i>n</i> = 5 (1.2%) +	INFP <i>n</i> = 13 (3.1%) +++	INTP <i>n</i> = 25 (5.9%) +++++ +	IJ	147	(34.8%)		
				IP	60	(14.2%)		
				EP	88	(20.8%)		
				EJ	128	(30.3%)		
				ST	209	(49.4%)		
				SF	41	(9.7%)		
				<b>NF</b>	<b>50</b>	<b>(11.8%)</b>		
				<b>NT</b>	<b>123</b>	<b>(29.1%)</b>		
				<b>SJ</b>	<b>181</b>	<b>(42.8%)</b>		
				<b>SP</b>	<b>69</b>	<b>(16.3%)</b>		
				NP	79	(18.7%)		
				NJ	94	(22.2%)		
				TJ	231	(54.6%)		
				TP	101	(23.9%)		
				FP	47	(11.1%)		
				FJ	44	(10.4%)		
The Sixteen Complete Types				Dominant Types				
ESTP <i>n</i> = 35 (8.3%) +++++ +++	ESFP <i>n</i> = 10 (2.4%) ++	ENFP <i>n</i> = 19 (4.5%) +++++	ENTP <i>n</i> = 24 (5.7%) +++++ +	IN	79	(18.7%)		
				EN	94	(22.2%)		
				IS	128	(30.3%)		
				ES	122	(28.8%)		
				ET	171	(40.4%)		
				EF	45	(10.6%)		
				IF	46	(10.9%)		
				IT	161	(38.6%)		
Jungian Types (E)		Jungian Types (I)		Dominant Types				
	<i>n</i>	%		<i>n</i>	%			
E-TJ	112	26.5	I-TP	42	9.9	Dt. T	154	36.4
E-FJ	16	3.8	I-FP	18	4.3	Dt. F	34	8.0
ES-P	46	10.9	IS-J	105	24.8	Dt. S	151	35.7
EN-P	42	9.9	IN-J	42	9.9	Dt. N	84	19.9
<i>N</i> = 423 + = 1% of <i>N</i>								
Schullery, Knudstrup, Schullery, & Pfaff								

ers' ratings of their leaders (Forsyth, 1990). Fitzgerald (1997) reviewed several studies describing similar dualities of desirable expertise, including Bass' (1981) socioemotional versus task performances, Srivasta's (1983) rational versus emotional modes, Pascale's (1990) hard-minded versus soft-hearted values, and Heath and Heath's (1991) androgynous possession of both the stereotypic masculine and feminine skills (all as cited in Fitzgerald). Hence, we named our two factors People and Task.

Factor analysis did not consistently locate the Coaching, Facilitating Change, and Empowering Employees variables, so we listed them where they were most often located. Also, the order of the factors was not consistent, so, again, we displayed them as in the majority (two out of three) of the analyses. Managers' scores on these two factors were calculated for the Boss, Employee, and Peer data sets. Additional reduction of the MLPI data was achieved by averaging a manager's scores across the 20 MLPI management practices, separately for each of the four evaluating groups. The evaluation consistency of different evaluating groups was investigated with Pearson correlations between the various factor and average scores.

To investigate personality type effects, managers were scored "1" or "0" for membership or not, respectively, in each of the 52 independent personality type groupings shown in TABLE 1. For example, when testing for an effect of being a dominant extraverted Thinking Jungian type, all ETJs were scored 1, and the rest of the sample was scored 0, and similarly for all 52 personality type groupings tested. (See TABLE 1 for the corresponding sample sizes.) Point-biserial, Spearman rank-order correlations (Cohen & Cohen, 1983; SPSS, 1998) were calculated between these dichotomous group-membership variables and the managers' scores on the 20 individual MLPI skills and their MLPI average and factor scores.

For these smaller, subsample analyses, the conservative, nonparametric Spearman procedure (with its concomitant loss of power) was used in preference to the Pearson correlation because (1) most of the dichotomous type-membership variables differed greatly in size, (2) the interval measurement level of scores on instruments such as the MLPI is questionable (Cohen & Cohen, 1983), and (3) the MLPI scores for the smaller groups were of uncertain normality, with many failing to pass the Kolmogorov-Smirnov and Shapiro-Wilk tests. Those same reasons, plus the loss of information that

**Table 2. MLPI Factors: Component Variables Listed in Order of Decreasing Loading.**

People Factor	Task Factor
Approachable	Directive
Trust	Planning and organizing
Participative	Resourcefulness
Teamwork	Strategy
Delegation	Evaluating performance
Communication	Goal setting
Recognition	Decisiveness
Self-confidence	Technical expertise
Empowering employees	Performance standards
	Coaching
	Facilitating change

would result from averaging continuous MLPI data, also argued against comparing mean MLPI scores across personality types using *t* tests or ANOVA. Because this was an exploratory study and a plausible case could be made for a relationship between virtually any of the MBTI groupings and one or more of the MLPI items, no multiple comparisons correction was made to minimize Type I (false positive) errors. Power analysis (Cohen, 1988) indicates that Pearson correlations have a 46% and 97% chance of a Type II (false negative) error, assuming population correlations of .1 and .2, respectively, and  $n = 350$  (a typical value following the case-wise deletion for missing data). The power of the nonparametric Spearman correlations would be even lower, indicating that a substantial number of small correlations that are present in the population will remain undetected.

## RESULTS AND DISCUSSION

The overall consistency of evaluations by the four evaluating groups—Boss, Employee, Peer, and Self—is shown in TABLE 3 as the correlations between pairs of the average MLPI scores assigned to a manager by the four evaluating groups. Correlations for all pairings of the four evaluating groups were positive and significant with a low probability ( $p < .001$ ). Thus, there tended to be general agreement by a manager's boss, employees, peers, and self about that person's management practices, although there was much unexplained variance.

**Table 3. Correlations Between MLPI Average Ratings by Boss, Employee, Peer, and Self.**

Evaluator	Employees	Peers	Self
Boss	.327***	.402***	.238***
Employees		.393***	.230***
Peers			.284***

\*\*\* $p < .001$ **Table 4. Correlations Between MLPI Factor Ratings by Boss, Employees, and Peers.**

Evaluator–Factor	Employees–People	Peers–People	Boss–Task	Employees–Task	Peers–Task
Boss–People	.418***	.499***		-.102	.017
Employees–People		.449***	-.089		.020
Peers–People			-.205***	-.155**	
Boss–Task				.408***	.476***
Employees–Task					.458***

Note: Correlations between Task and People factor scores within an evaluation group are forced to be 0 by the factor extraction procedure. \*\* $p < .01$  \*\*\* $p < .001$

Also, we note that the correlations involving Self data were the lowest. Similar (van Hooft, van der Flier, & Minne, 2006) or lower (Conway & Huffcutt, 1997) interrater correlations have been reported for other instruments, with Extraverts, in particular, overrating themselves compared to how others see them (Van Velsor & Fleenor, 1997).

A second, more discriminating, consistency check was performed by correlating managers' People- and Task-factor scores across the evaluating groups, as shown in TABLE 4. (The Self data were not used because they have a different factor structure.) Again, the evaluating groups were in statistical agreement: Pairings of all three sets of People-factor evaluations and from all three sets of Task-factor evaluations yielded positive, significant correlations ( $p < .001$ ). In contrast, correlations between a manager's Task evaluation by one group and People evaluation by a different group were either not significant or negative. The two significant negative correlations suggest a managerial conundrum: A manager's People-factor evaluation by his or her peers tended to be in the opposite direction to the Task-factor evalua-

tion by his or her boss and employees. For example, a manager seen as having great people skills by his peers may appear to his boss and employees to be less competent at getting the job done, and vice versa.

Correlations between a manager's membership in the 52 MBTI groupings and the manager's individual MLPI management-practice scores are shown in TABLE 5 for the 9 practices belonging to the People factor and in TABLE 6 for the 11 Task-factor practices. For clarity of presentation, only the existence and signs of significant correlations are shown; all significant correlations were small ( $.098 < r < .20$ ,  $.001 < p < .05$ ). Each significant correlation is coded as the initial letter of its corresponding evaluation group—B, Boss; E, Employee; P, Peer; S, Self—with sign matching the sign of the correlation. TABLES 5 and 6 reveal many interesting relationships that could be individually analyzed, but our interpretation of the MBTI effects on management practices focuses on the major patterns defined by the correlations between managers' MBTI type memberships and their MLPI average and factor scores, shown in TABLE 7.

The single unanimous evaluation observed was the

positive evaluation of the SJ temperament managers on the Task factor by their bosses, employees, and peers. This extends to evaluations of ISJs and ISTJs by employees and peers. These findings are consistent with the SJs' characteristic conscientiousness and respect for authority (Keirsey, 1998) and the STJs' generally recognized good fit in the business world (Myers et al., 1998), which is also consistent with our sample's distribution (TABLE 1). The STJs' legendary resistance to change (Clancy, 1997) did not present a problem for them in the present study.

ENP and ENFP managers were viewed positively by their peers, both overall and with respect to their People-factor skills. Although people skills are expected of ENFPs (Myers et al., 1998), the fact that ENPs are similarly correlated suggests that the F contribution is not essential in the present context.

In contrast, the SP temperament managers were negatively evaluated by their peers, both overall and with respect to the Task factor. This might be expected for the independent, free-spirited SP temperaments (Keirsey, 1998). However, it is interesting that only the peers of the SP managers observed this failing. The ISTP managers were negatively evaluated overall by both their peers and employees, and, with respect to the People factor, by employees. Myers et al. (1998, p. 83) says that ISTPs may "overlook others' emotional needs and values," and "not give sufficient weight to the impacts of their decisions on others." It is reasonable that this would be a problem particularly for peers and employees.

Three groups of managers received below-average evaluations from their bosses: NJs and INJs overall, and NJs and ESFPs on the task factor. Myers et al. (1998, pp. 51–52) labeled NJs "Visionary Decision Makers," who "strive to accomplish the goals of their inner vision," which, we suggest, may not be the same as their bosses' goals. Further, ESFPs may "have trouble accepting and meeting deadlines" (p. 72), which would be a particular problem from the perspective of the manager's boss.

Finally, of the 20 MLPI management practices, Directive elicited the most agreement among the evaluators. Three of the four evaluating groups gave above average Directive scores to three different MBTI groups; there is only one other case of three-way agreement in TABLES 5 and 6. Directive also had six MBTI groups that generated agreement by two evaluating groups, whereas none of the other 19 practices had more than four such two-way agreements. This suggests that Directive is the

most universally identified and either valued or missed of all the 20 management behaviors studied.

## CONCLUSIONS

Many significant relationships were observed between a manager's type and the manager's skill evaluations, and these relationships were generally consistent with type theory. However, there were also many *a priori* plausible relationships that were not observed. Perhaps most surprising among these, none of the MBTI's four dichotomous preference scales was correlated with either the average or the factored MLPI scores, and the E–I scale was not correlated with any of the 20 individual MLPI practices—for any of the evaluating groups. It is evident that predictions of significant type effects on management behaviors depend on simultaneous consideration of multiple, interacting scales. That is, of course, consistent with MBTI theory, and cautions against simplistic predictions based on only a single MBTI dichotomy. However, even when combinations of scales were considered, 34 of the 52 MBTI groupings were without significant effects on either the average or factored MLPI scores, and 25 were without significant effects on scores of any of the People-factor practices. Although part of this deficit must be the result of low statistical power, it may also be that in our sample of experienced, successful managers, many have already discovered and compensated for all but the most serious of their type-related handicaps.

The different evaluator groups were in broad statistical agreement on managers' skills across the whole sample; however, unanimity about MBTI group membership effects is rare. There was only one case of agreement among all of the relevant evaluating groups: The SJs alone seemed to be able to please all the people all the time, at least concerning task accomplishment. Although the general lack of agreement among evaluators regarding personality-type effects may call into question the validity of the evaluators' observations (Fletcher, Baldry, & Cunningham-Snell, 1998), it is also consistent with, and even expected from, principles of multisource evaluation theory. The reason that 360-degree feedback is needed is that in the course of normal workplace life, the various evaluating groups typically experience different aspects of the same manager's behavior (Borman, 1997; Van Velsor & Fleenor, 1997). Apparently, only the most global and virtuous attributes—such as the SJs' dedication—will be recognized and valued by all.

Table 5. Significant Correlations Between Type and Scores on MLPI People-Factor Variables.

Type	Approachable	Trust	Participative	Teamwork	Delegation	Communication	Recognition	Self-Confidence	Empower Employees
I									
N									
F								-B	
P									
ISTJ									
ISFJ									
INFJ								-B	
INTJ									
ISTP	-E, -P	-E, -P	-P	-E, -P			-E	-E	-E, -P
ISFP	S	S	B	S	S				
INFP				S	B		B		
INTP						-S			
ESTP									
ESFP									
ENFP			P	P	E, P	S	P		P
ENTP									
ESTJ									
ESFJ								E	
ENFJ									
ENTJ					S				
Dt. N									
Dt. S									
Dt. F									
Dt. T									
ETJ									
EFJ					-S			E	
ESP									
ENP			P			P, S	P	P, S	P
ITP	-P		-P	-E, -P		-E, -P			
IFP	S	B, S	B	S	B		B		B, S
ISJ									
INJ						-B	-B		
NF									
NT									
SJ							B		
SP			-P			-P			
SF		S							

continued on next page &gt;&gt;



**Table 5 (continued). Significant Correlations Between Type and Scores on MLPI People-Factor Variables.**

Type	Approachable	Trust	Participative	Teamwork	Delegation	Communication	Recognition	Self-Confidence	Empower Employees
ST		-S							
NJ							-B		
NP								S	
IP									
IJ									
EP									-B
EJ									
TJ									
TP				-E, -P					
FP	S	S		S		S	P		
FJ						-B	-B	-B	
ET									
EF					-S			-B	
IT									
IF	S	S							

Note: Point-biserial, Spearman rank-order correlations were calculated between dichotomous group-membership variables scored "0" or "1" and the managers' scores on the individual MLPI skills. Each significant correlation is coded as the initial letter of its corresponding evaluation group: B, Boss; E, Employee; P, Peer; S, Self—with sign matching the sign of the correlation.

One question that would occur to a manager undergoing a 360-degree evaluation is, "Are my problems unique to me or are they characteristic of individuals sharing my personality type?" The correlational data provided in TABLES 5–7 provide a rich resource for answering this question and understanding the specific issues to be anticipated. A few types are associated with a sufficiently broad spectrum of difficulties that addressing them as a group appears justified. These include NJs, ISTPs, and ESFPs. Careful review of these individuals' types might be prudent, as the change of a single letter (or, perhaps, mature and effective development of its opposite) could change them from a negative to a

positive rating, or the reverse, e.g., NJs to SJs; ISTPs to ISTJs, and ESFPs to ENFPs. For those groups and others for whom problems appear to be type related, the vast MBTI literature can then be consulted for help on addressing the specific issues identified.

Finally, it must be remembered that the industry-average results presented here may not apply to all specific fields or to nonmanagement employees. For example, it is conceivable that the deficiencies we report for SP managers may be overlooked in deference to gifts of creativity and performance in fields such as the arts or sports and on the part of employees without the burdens of management responsibility.

Table 6. Significant Correlations Between Type and Scores on MLPI Task-Factor Variables.

Type	Directive	Planning Organizing	Resourcefulness	Strategy	Evaluating Performance	Goal Setting	Decisiveness	Technical Expertise	Performance Standards	Coaching	Facilitating Change
I											
N	-E, -S										
F							S			P	
P	-P										
ISTJ	E, P	E			E						
ISFJ					S	S			S		
INFJ								P			-B
INTJ			-S	-S		-P, -S	-S			-S	
ISTP		-E, -P	-E, -P	-E, -P	-P	-E, -P	-E, -P		-P	-E, -P, -S	
ISFP											S
INFP					S, B		B			B	B
INTP											
ESTP											
ESFP	-S, -B	-B									
ENFP				P					P	P	P
ENTP			S								
ESTJ	B										
ESFJ			E								
ENFJ									-S		
ENTJ											
Dt. N	-B, -S	-B	-B							-B	-B
Dt. S					E	S					
Dt. F						S					
Dt. T	B		-E		-E, -P		-E				
ETJ											
EFJ			E								
ESP		-P				-P					
ENP			S	P, S		P			P	P	
ITP				-P	-P	-E			-P	-P	
IFP					B	B	S			B	B, S
ISJ	E, P, S	E			E	S					E
INJ	-S	-B	-S	-S	-B	-B, -S	-B			-B, -S	-B
NF										P	
NT	-E				-E						
SJ	B, E, S			E	B	P, S				B	E, P
SP		-P	-P	-E, -P		-P	-P	-P	-P	-P	-P
SF							-B	-B			

continued on next page &gt;&gt;

**Table 6 (continued). Significant Correlations Between Type and Scores on MLPI Task-Factor Variables.**

Type	Directive	Planning Organizing	Resourcefulness	Strategy	Evaluating Performance	Goal Setting	Decisiveness	Technical Expertise	Performance Standards	Coaching	Facilitating Change
ST	B, E, S	B	B				B				
NJ	-E, -S			-S	-B, -S	-S	-B		-B, -S	-B	-B
NP			S	S					B, P		
IP							-P				B
IJ	P				E			P			
EP	-B, -P										
EJ											
TJ											
TP		-P		-E, -P		-P			-P		-E, -P
FP										S	
FJ							-B				
ET								-P			
EF	-S	-B									
IT										-S	
IF									S	S	S

*Note:* Point-biserial, Spearman rank-order correlations were calculated between dichotomous group-membership variables scored "0" or "1" and the managers' scores on the individual MLPI skills. Each significant correlation is coded as the initial letter of its corresponding evaluation group: B, Boss; E, Employee; P, Peer; S, Self—with sign matching the sign of the correlation.

Table 7. Significant Correlations Between Type and MLPI Average and Factor Scores.

Type	Average	Task Factor	People Factor	Type	Average	Task Factor	People Factor
I				ESP			
N				ENP	P		P
F				ITP	-E		
P				IFP	B, S		
ISTJ		E, P		ISJ		E, P	
ISFJ				INJ	-B		
INFJ				NF			
INTJ				NT		-E	
ISTP	-E, -P		-E	SJ		B, E, P	
ISFP				SP	-P	-P	
INFP				SF			
INTP				ST		B	
ESTP				NJ	-B, -S	-B	
ESFP		-B		NP	S		
ENFP	P		P	IP			
ENTP				IJ			
ESTJ				EP			
ESFJ				EJ			
ENFJ	-S			TJ			
ENTJ				TP			
Dt. N				FP			
Dt. S		E		FJ			
Dt. F				ET			
Dt. T				EF			
ETJ				IT			-P
EFJ				IF			

Note: Point-biserial, Spearman rank-order correlations were calculated between dichotomous group-membership variables scored "0" or "1" and the managers' scores on the individual MLPI skills. Each significant correlation is coded as the initial letter of its corresponding evaluation group: B, Boss; E, Employee; P, Peer; S, Self—with sign matching the sign of the correlation.

## REFERENCES

- Bales, R. F. (1983). *The SYMLOG key to individual and organizational values*. San Diego, CA: SYMLOG Consulting Group.
- Borman, W. C. (1997). 360° ratings: An analysis of assumptions and a research agenda for evaluating their validity. *Human Resource Management Review*, 7(3), 299–315.
- Bracken, D. W., Timmreck, C. W., & Church, A. H. (Eds.) (2001). *The handbook of multisource feedback*. San Francisco: Jossey-Bass.
- Church, A. H., & Bracken, D. W. (Eds.) (1997). *Special issue: 360-degree feedback systems*. *Group & Organization Management: An International Journal*, 22(2), 147–309.
- Clancy, S. G. (1997). STJs and change: Resistance, reaction, or misunderstanding? In C. R. Fitzgerald & L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 415–438). Palo Alto, CA: Davies-Black Publishing.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Conway, J. M., & Huffcutt, A. I. (1997). Psychometric properties of multisource performance ratings: A meta-analysis of subordinate, supervisor, peer, and self-ratings. *Human Performance*, 10(4), 331–360.
- de Charon, L. C. (2003). Leadership development within a federal government engineering environment: A leadership program framework based on Myers-Briggs personality types (Doctoral dissertation, Walden University, 2003). *Dissertation Abstracts International*, 63, 3631.
- Edwards, M. R., & Ewen, A. J. (1996). *360° feedback*. New York: American Management Association.
- Fitzgerald, C. R. (1997). Type development and leadership development: Integrating reality and vision, mind and heart. In C. R. Fitzgerald & L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 311–335). Palo Alto, CA: Davies-Black Publishing.
- Fletcher, C., Baldry, C., & Cunningham-Snell, N. (1998). The psychometric properties of 360 degree feedback: An empirical study and a cautionary tale. *International Journal of Selection and Assessment*, 6(1), 19–34.
- Forsyth, D. R. (1990). *Group dynamics* (2nd ed.). Pacific Grove, CA: Brooks Cole Publishing Company.
- Haley, U. C. V. (1997). The MBTI and decision-making styles: Identifying and managing cognitive trails in strategic decision making. In C. R. Fitzgerald & L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 187–223). Palo Alto, CA: Davies-Black Publishing.
- Hammer, A. L. (Ed.) (1996). *MBTI applications: A decade of research on the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Huszczko, G. E. (1996). *Tools for team excellence: Getting your team into high gear and keeping it there*. Palo Alto, CA: Davies-Black.
- Keirse, D. (1998). *Please understand me II: Temperament, character, intelligence*. Del Mar, CA: Prometheus Nemesis.
- Kroeger, O., & Thuesen, J. M. (1992). *Type talk at work*. New York: Dell.
- Ludeman, K. (1995). To fill the feedback void. *Training and Development*, 49, 38–41.
- Maes, L. E. (2003). The influence of personality preferences on openness to learning/change following a leadership development program (Doctoral dissertation, Alliant International University, 2003). *Dissertation Abstracts International*, 64, 5262.
- 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.
- Nutt, P. C. (1989). *Making tough decisions: Tactics for improving managerial decision making*. San Francisco: Jossey-Bass.
- Peiperl, M. A. (2005). Getting 360-degree feedback right. In *Harvard business review on appraising employee performance* (pp. 69–83). Boston: Harvard Business Review.
- Pfaff & Associates. (1989). *MLPI Management-Leadership Practices Inventory*. [Brochure]. Portage, MI: Author.
- Pfaff & Associates. (2002). *Products-360-degree feedback-manager*. Retrieved from <http://home.att.net/~selectpro/manager.htm>.
- Pfaff, L. A. (1995). *MLPI psychometrics*. Unpublished manuscript.
- Roush, P. E. (1997). Type, leadership feedback, and willingness to change. In C. R. Fitzgerald & L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 163–186). Palo Alto, CA: Davies-Black Publishing.
- SPSS Base 8.0: *Applications guide*. (1998). Chicago: SPSS, Inc.
- Sundstrom, E., & Busby, P. L. (1997). Co-workers' perceptions of eight MBTI leader types: Comparative analysis of managers' SYMLOG profiles. In C. R. Fitzgerald & L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 225–265). Palo Alto, CA: Davies-Black Publishing.
- Tornow, W. W., & London, M. (1998). *Maximizing the value of 360-degree feedback*. San Francisco: Jossey-Bass.
- Van Hooft, E. A. J., van der Flier, H., & Minne, M. R. (2006). Construct validity of multi-source performance ratings: An examination of the relationship of self-, supervisor-, and peer-ratings with cognitive and personality measures. *International Journal of Selection and Assessment*, 14(1), 67–81.
- Van Velsor, E., & Fleenor, J. W. (1997). The MBTI and leadership skills: Relationships between the MBTI and four 360-degree management feedback instruments. In C. R. Fitzgerald and L. K. Kirby (Eds.), *Developing leaders: Research and applications in psychological type and leadership development: Integrating reality and vision, mind and heart* (pp. 139–162). Palo Alto, CA: Davies-Black Publishing.
- Weissman, R. J. (1999). The influence of managers' MBTI results on 360-degree feedback and change (Doctoral dissertation, California School of Professional Psychology, 1999). *Dissertation Abstracts International*, 60, 6407.

**Nancy M. Schullery** received her MBA from Eastern Michigan University and her Ph.D. in Communication from Wayne State University. Following a management career at Burroughs/UNISYS, she now teaches in the Business Information Systems Department of the Haworth College of Business at Western Michigan University and serves as Director of Undergraduate Programs. She is a certified MBTI® practitioner. Her research interests include resolving conflict in organizations, the effects of typology, small group communication, argumentativeness, group skills pedagogy, and workplace culture. She has published her research in such journals as *Management Communication Quarterly*, *Journal of Business Communication*, and *Communication Research Reports*. The Association for Business Communication awarded her research on group pedagogy in *Business Communication Quarterly* the Outstanding Article Award for 2001 and the National Communication Association's Applied Communication Division judged her paper in *Management Communication Quarterly* on workplace philanthropy one of the "Top Three" papers presented at NCA (2000).

**Paul Knudstrup** is the president and founder of Midwest Consulting Group, Inc. He focuses his consulting work on strategic planning, management team development, succession planning, management selection, performance management, and personal productivity. Before forming MCG, he was executive director of the Fetzer Business Development Center at Western Michigan University. He is certified in the interpretation of both the *Myers-Briggs Type Indicator*® instrument and the MLPI 360° feedback survey, making extensive use of these and other instruments in management and organizational development. Paul has a master's degree from Western Michigan University.

**Stephen E. Schullery** received his Ph.D. in Physical Chemistry from Cornell University. During his tenure in the Chemistry Department at Eastern Michigan University, he studied application of physical chemistry to problems of biological relevance, specializing in both experimental and theoretical studies of lipid membranes while also collaborating on theoretical modeling of colleagues' hydrogen-bonding solvation and medicinal chemistry drug design studies. This work led to 30 publications in such journals as *Biochemistry*, *Biochimica et Biophysica Acta*, and *Bioorganic & Medicinal Chemistry*. Most recently, he has been collaborating on computer modeling and statistical analysis of survey data relevant to communication and pedagogical issues.

**Lawrence A. Pfaff** holds a bachelor's degree in Physics and doctorate and master's degrees in Counseling Psychology. He has consulted extensively in the areas of management development, team building, organizational needs assessment, employee selection techniques, and performance appraisal, including implementation of 360-degree feedback systems. He is the author of the Management-Leadership Practices Inventory (MLPI), the Team Practices Inventory (TPI), and the Professional Communication Inventory (PCI). Dr. Pfaff is the former Dean of the School of Management at Aquinas College and is currently an Associate Professor of Psychology at Spring Arbor University. He has also been a faculty member for the Stryker Center for Management Studies at Kalamazoo College, and he has taught graduate classes at Western Michigan University. His research has been cited in *HR Magazine, Inc.*, *BusinessWeek*, *Working Woman*, *Incentive*, *Executive Female*, *Across the Board*, the *Detroit Free Press*, *Retailing Today*, and *Data-Based Edutrends* (Canada), and he has appeared as a guest on numerous radio programs across the U.S. and Canada.

**CONTACT**

Nancy M. Schullery, Ph.D.  
Professor  
Business Information Systems Department  
Haworth College of Business  
Western Michigan University  
Kalamazoo, MI 49008  
269.387.5403  
nancy.schullery@wmich.edu

This *Journal* is being made available through the collaborative efforts of Dr. Tom Carskadon, Editor of the *Journal of Psychological Type*<sup>®</sup>, 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 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 MBTI Trust, Inc. 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.