

Connecting Psychological Type and the Myers Briggs Type Indicator (MBTI) with Reversal Theory and the Apter Motivational Style Profile (AMSP): A Research Report

Authors

Jennifer Tucker and Hile Rutledge

Otto Kroeger Associates (OKA), 3605 Chain Bridge Road; Fairfax, VA, 22030 USA.

Phone: 703-591-6284; E-Mail : JTucker@typetalk.com; HRutledge@typetalk.com

Abstract

This paper reports the findings of a study researching possible connections between psychological type theory, measured and reported by the Myers Briggs Type Indicator (MBTI), and reversal theory, a motivational model measured and reported by the Apter Motivational Styles Profile (AMSP). We were interested in these specific theories and instruments because of the differences in their underlying theoretical assumptions, with one theory and instrument focusing on in-born “stable” cognitive personality preferences (psychological type), and the other focusing on the changeability and inconsistencies of motivational states (reversal theory). Our research study sample included 168 people who had completed the AMSP, and validated their psychological type using the MBTI. We found a number of statistically significant and theoretically meaningful relationships between the two, with interesting implications for both future research and for practitioners using these tools.

Keywords: Psychological Type, Myers Briggs Type Indicator, reversal theory, Apter Motivational Styles Profile, psychological instruments, personality, motivation

Connecting Psychological Type and the Myers Briggs Type Indicator (MBTI) with Reversal Theory and the Apter Motivational Style Profile (AMSP): A Research Report

1. Introduction

Psychological assessment instruments serve as useful tools for representing different dimensions of human personality. In turn, experimental studies comparing individual results across instruments can often illuminate connections between their underlying theoretical frameworks. This paper reports the findings of a study researching the possible connections between the theory of psychological type - a cognitive model of personality, and reversal theory - a model focusing upon motivational states.

Two instruments designed to operationalize these theories were used to conduct the research: the Myers-Briggs Type Indicator (MBTI®) Assessment, and the Apter Motivational Style Profile (AMSP). The MBTI, currently the most widely used personality assessment instrument in the world (Myers et al, 1998), is based upon C.G. Jung's theory of psychological types. The AMSP, a newer instrument, is based upon a theory of motivation called reversal theory, first proposed by Dr. Michael Apter.

Comparing and contrasting psychological type with reversal theory raises intriguing questions about the possible relationships between these two theories when expressed through individuals. This research study was initiated to explore this connection.

1.1 Psychological Type: Overview

C.G. Jung conceptualized the theory of psychological types by proposing that we each have in-born preferences for the way we gather information, make decisions, and gain energy. These personality preferences are organized into pairs of opposing constructs, called psychological types. Jung's first identified pair was the extraversion-introversion type dichotomy; others, described below, followed later.

One of the key theory points of psychological type is Jung's proposal that each individual has an in-born preference, which may be strong or weak, for one side of each of the identified preference pairs. While these preferences are not absolutes or "traits," the theory suggests certain stability in preferences over time. The goal, therefore, is to develop the effective use of preferences over a lifetime, called "type development," and to learn to access and utilize non-preferences for better self-management. The core philosophy is that one's psychological type preferences will always be the first turned to, and that the non-preferences will be generally accessed with less ease.

Jung's work was operationalized and popularized by Katharine Briggs and Isabel Briggs Myers, who translated psychological type theory into the MBTI Assessment (Myers et al, 1998). Using forced choice questions, the MBTI reports an individual's psychological type preferences along four scales, representing the four psychological type dichotomies. Table 1 lists each of the

MBTI scales, and the two preferences associated with each (Myers et al, 1998; Kroeger et al, 2002).

Table 1 – Myers-Briggs Type Indicator (MBTI) Preference Scale Descriptions

Scale	Descriptions	
E/I - Energy Sources - Introversion/Extraversion	Extravert (E) – Gain energy from interacting with outer world of people, action and things. Generally oriented toward outer world experience. Applicable words: interaction, expressive, disclosing, "speak to think"	Introvert (I) – Gain energy from inner world of concepts and ideas. Generally oriented towards inner world contemplation. Applicable words: concentration, internal, contained, reflective, "think to speak."
S/N – Perceiving Mental Function: "Data Gathering" (What do you first notice?)	Sensor (S) – Prefer to perceive the immediate, practical, real facts of experience and life, collecting information through use of the five senses.	Intuitive (N) – Prefer to perceive possibilities, patterns and meanings of experience, relying on a sixth sense of hunches to gather information.
T/F - Judging Mental Function: "Decision Making" (How do you prefer to make decisions?)	Thinker (T) – Make decisions objectively and impersonally, seeking clarity by detaching themselves from the problem. Cause-effect oriented.	Feeler (F) – Make decisions subjectively and personally, seeking harmony with inner values by placing themselves within the problem. Relationship oriented.
J/P – Orientation (How people express perceptions or judgments in the outer world)	Judger (J) – More likely to show the external world their decision-making (judgments). Behaviorally: prefer to live in a decisive, planned, orderly way, aiming to regulate and control events. Often appear closure-oriented, with a focus on the goal to be reached.	Perceiver (P) – More likely to show the external world their Perceiving mental function, sharing data and perceptions rather than decisions. Behaviorally: prefer to live in a spontaneous flexible way, aiming to understand life and adapt to it.

The MBTI ultimately results in a four-letter psychological type, reflecting the respondent’s self-reported preferences on each of the four scales above. There are 16 different types, each representing a unique combination of the four preferences. There are also several preference pairs and hierarchies useful in anticipating and understanding a person’s behavioral style, communication, and leadership preferences.

The most important step of the MBTI testing process is the process of “type validation,” where the subject compares the instrument report against an individual assessment of personal preferences based on a description of the theory and examples. The resulting “validated type” is, therefore, the most accurate representation of type, because it reflects both the instrument results, and the person’s self-conceptualization and insight.

1.2 Reversal Theory: Overview

Reversal theory is a general theory of personality, motivation, and emotion, and emphasizes the complexity, changeability, and inconsistency of behavior. The theory, first formulated by Dr. Michael Apter, proposes that individuals can and do regularly reverse between opposing psychological states, depending upon specific meanings and motives held by that individual.

Whereas psychological type conceptualizes preferences as in-born cognitive functions, reversal theory is a structural phenomenological theory focused on the changeability of motivational states experienced, given the personal meaning attributed to a situation, and the person's motives at that time. For example, when facing a roller coaster ride, one person may feel excitement, whereas another feels fear. Sometimes, one is motivated by filling personal needs; sometimes, one is motivated by fulfilling another's needs, and so on.

Like psychological type, reversal theory is organized in a series of four dichotomies, in this case called "domains." Each domain contains two states; one can experience only one state at a time within each pair, but may switch, or "reverse" between those states as either the situation or the meaning attributed to it change. As such, motivational states are fluid, with reversals between individual states in a pair across all four domains possible at any given time. Further, some domains and motivational states are more important to some people than others, and certain states more likely to be experienced over time.

Table 2 lists each of the reversal theory domains, and the two states associated with each (Apter, 2001). Unlike the MBTI, which considers each dichotomy to be one scale, instruments based on reversal theory represent each state as a separate scale. This reflects the fact that while one only experiences one state in a domain at a given time, they may be in fact independent in aggregate over time.

Further, the states across two reversal theory domains, "Transactions" and "Relationships," are generally considered in combination because of their theoretical interdependence (a transaction is only relevant when framed in terms of the relationship involved); hence, while the individual states in those domains are considered, we also present the four state combinations – called transaction pairs - across those domains.

Table 2 – Reversal Theory Scale Descriptions

Domain	State (Scale)	Description
Means-Ends	Telic	Motivation in this state comes from goal achievement and accomplishment, with value placed on the future consequence or benefit of an activity (the ends).
	Paratelic	Motivation in this state comes from enjoying the process – or means – of an activity itself.

Domain	State (Scale)	Description
Rules	Conforming	Motivation comes from belonging and doing what is expected, with rules and norms experienced as supportive.
	Negativistic	Motivation comes from breaking out of the rules and expectations. In this state, the motive is to act outside the status quo.
Transactions	Mastery	Motivation comes from power, control, and strength – either for oneself or another.
	Sympathy	Motivation comes from providing or receiving personal care and emotional support, for oneself or another.
Relationships	Autic (self)	Motivation comes from filling one’s own needs, and to focus on personal success or nurturing.
	Alloic (other)	Motivation comes from identifying with others and filling their needs.
Transaction Pairs	Autic Mastery	Motivation comes from having personal power, skills, or strength, and from feeling capable or strong.
	Autic Sympathy	Motivation comes from caring for oneself, and wanting support and caring from others.
	Alloic Mastery	Motivation comes from wanting to give power and knowledge to others, to give others ability or skill.
	Alloic Sympathy	Motivation comes from wanting to care for others and to give them love and nurturing.

While reversal theory emphasizes the changeability of motivational states, it also recognizes that individuals may express certain patterns of state combinations over time. This is measured using the Apter Motivational Styles Profile (AMSP), a 40-item Likert scale questionnaire used to quantify the relative frequency of the different motivational states experienced over time. This frequency is also referred to as “state dominance,” and is often used as a measure to help people begin to identify when and under what circumstances they might experience certain states. With this starting point, it is then possible to see where different states might be more beneficial, and to learn how to “trigger” reversals into an alternative state.

1.3 Theory Comparison

Before comparing the reported relationships between the MBTI and AMSP, it is useful to review a summary contrast of their underlying theories. Table 3 summarizes the key theory differences between psychological type theory and reversal theory.

Table 3 – Theory Comparison

Psychological Type, measured by the MBTI	Reversal Theory, measured by the AMSP
Cognitive model focusing upon in-born mental functions and processes.	Motivational model focusing upon changeability of behavior and emotion.

Emphasizes type development and dynamics over a lifetime.	Emphasizes changeability and motivational balance and diversity.
Independent of trait theory, but doesn't contradict it.	Generally runs counter to trait theory, by focusing on reversals.
While individuals need to access both sides of each preference pair to be effective, individuals have a preference for one side, with the other accessed generally less easily.	While individuals can only experience one state in each domain at a single time, certain states may be experienced more often (e.g. be more salient or dominant) over time.

There are several reasons for further comparing these two theories using their respective instruments. First, from a research perspective, the MBTI is currently a widely administered psychological instrument, with well-documented validity statistics and research studies (Myers et al, 1998). As such, it is commonly used to empirically establish convergent validity for other instruments with similar constructs. The AMSP is a relatively new instrument; therefore, this type of comparative study is useful to explore how its quantitative representation of the underlying theory either aligns or contrasts with other theories.

Second, from an applied perspective, while practitioners often use the MBTI productively in training and coaching settings, some clients report feeling restricted by its preference-based rigidity and failure to adequately acknowledge the inconsistency of individuals across different circumstances. Reversal theory offers a more dynamic view of human behavior, while still providing a stable structure for classifying and understanding it. Ultimately, while psychological type is useful for understanding human personality and enhancing self-management, reversal theory provides an action-based framework for altering motivational states in the moment when a state shift might be beneficial.

2. Method

The empirical component of this research study was designed to examine the relationship between the personality preferences reported by people with validated MBTI results, and individual patterns of dominant motivational states reported by people who had taken the AMSP. Our primary goal was to establish whether there were any statistically significant relationships between reported psychological types and reported reversal theory state dominance.

The volunteer sample participating in the study consisted of 168 individuals ranging in age from 24 to 60, who had validated their psychological type using the MBTI and completed the AMSP. Participants were primarily professionals from the consulting, training, and information technology fields, in both the United States government and private sectors. Organizational representation was diverse in both size and industry sector, with a maximum of 34 people representing any one organization. Participants were distributed across the U.S., however, most were based in the greater Washington, DC area.

For study purposes, MBTI results were self-reported to the study team by participants who had taken the MBTI Assessment and validated their type classification at the time of the study. AMSP results were generated by having participants complete the Internet web-based AMSP instrument, created by Apter International, the instrument's publisher.

In research settings, MBTI results are generally reported as either continuous variables along a preference scale (e.g., numerical score measuring strength of preference along an introversion-extraversion scale); or as categorical variables, with two levels within each scale (e.g., preference for introversion or extraversion). In this case, MBTI results were considered in terms of categorical scale preferences only (e.g., Extraversion or Introversion, Sensing or Intuition, etc), because quantitative preference strength scores were not available for all participants, because participants had taken different versions of the Indicator itself (each with different continuous scales), and because the categorical approach is ultimately the most consistent with psychological type theory.

This approach was also justified because of the essence of our research question. Given our interest in theory alignment, rather than pure quantitative relationships between instruments, we were most interested in seeing how the AMSP state dominance results compare against *validated* MBTI psychological types, which are those accepted by the individual as most accurate.

To represent reversal theory, AMSP results were reported as raw (non-standardized) numeric scores for each of the eight states, and for each of the four transaction pairs. This reporting standard is consistent with the underlying theory, as state dominance is generally considered in terms of continuous variables (e.g., how frequently a state is experienced).

The on-line AMSP instrument itself consists of 40 items, each measuring one scale or transaction pair on a five point frequency scale. Internal reliability for the instrument was established in previous studies using Cronbach's alpha coefficients, which ranged from 0.67 to 0.84 across scales. Test-retest reliability of the AMSP ranges from 0.71 to 0.92 across scales, all at a significance level of <0.001 (Apter, 2003).

Once participant data were collected into a single data set, the statistical relationships between the MBTI preference categories and AMSP state frequencies were analyzed using SAS, Version 8.2 for Windows. Again, the four scales of the MBTI were considered as categorical variables, with two levels per variable; AMSP states and transaction pairs were considered as continuous scores for each scale.

3.0 Results

The first step of analysis was to generate descriptive statistics for each instrument and to assess sample representativeness against both AMSP and MBTI general population norm groups. Tables 4 and 5 present the findings of this analysis.

Table 4 – AMSP Results: Sample Comparison to General Population Norm Group (Raw Score Means)

Scales	General International Population (N=1503)		Study Sample (N=168)	
	Mean	SD	Mean	SD
Telic	22.41	3.23	22.61	3.37
Paratelic	18.65	2.97	18.99	3.41
Conforming	19.76	3.25	20.09	3.45
Negativistic	13.20	3.15	13.65	3.69
Mastery	21.42	2.69	21.22	2.51
Sympathy	20.65	2.98	21.78	2.94
Autic	20.60	3.50	19.69	3.00
Alloic	21.80	4.10	23.30	3.02
Autic Mastery	20.24	3.29	19.49	3.24
Autic Sympathy	18.75	3.99	20.03	4.32
Alloic Mastery	22.61	3.29	22.98	3.66
Alloic Sympathy	22.54	3.36	23.62	3.17

Source of General Population Data: Apter, 2003.

Table 4 demonstrates that the AMSP results from this study are similar to the general population norm group, with all raw score means for each scale falling within one-half of a standard deviation of the general population means.

Table 5 shows that sample distributions across the MBTI scales were less representative, with an under-representation of Sensors and Feelers (and corresponding over-representation of Intuitives and Thinkers). Despite these differences, the large sample size allowed for the detection of differences between type preferences on these MBTI scales when compared to the AMSP.

Table 4 – MBTI Results: Sample Comparison to General Population Norm Group (Percent Representation by Preference)

	General Population (N=3009)	Study Sample (N=168)
Extravert	49%	49%
Introvert	51%	51%
Sensor	73%	32%
Intuitive	27%	68%
Thinker	40%	62%
Feeler	60%	38%
Judger	54%	59%
Perceiver	46%	41%

	General Population (N=3009)	Study Sample (N=168)
Source of General Population Data: Myers et al, 1998		

A Pearson correlation analysis comparing AMSP and MBTI results assessed the general relationship between the four MBTI scales and the eight AMSP states and four transactional pairs. Because preference scores were not available, MBTI preferences were assigned values of 0 and 1 for each scale for the purposes of analysis (extraversion, sensing, thinking, and judging preferences assigned a score of 0; introversion, intuitive, feeling, and perceiving preferences assigned score of 1). Thus, a negative Pearson correlation indicates relationship between a higher AMSP score and extraversion, sensing, thinking, and judging preferences on MBTI, and a positive Pearson correlation indicates relationship between a higher AMSP score and introversion, intuition, feeling, and perceiving preferences on MBTI.

Table 6 summarizes the results of the Pearson correlations across scales on both instruments. Statistically significant relationships were seen in a number of areas. The strongest correlations (greater than 0.35, with a p-value <0.001) were as follows:

- AMSP telic state correlated with MBTI preference for judging;
- AMSP paratelic state correlated with MBTI preference for perceiving;
- AMSP sympathy state correlated with MBTI preference for feeling;
- AMSP autic and mastery states, and autic-mastery transaction pair correlated with MBTI preference for extraversion.

Table 6 – Pearson Correlation Summary: AMSP Against MBTI

	MBTI Scales			
	Extraversion-Introversion	Sensing-Intuition	Thinking-Feeling	Judging-Perceiving
AMSP Scales				
Telic	-0.11	0.16 *	-0.09	-0.36 ***
Paratelic	-0.28 ***	0.18 *	0.08	0.40 ***
Conforming	0.05	-0.19 *	0.21 **	-0.06
Negativistic	-0.07	0.24 **	-0.07	0.23 **
Mastery	-0.34 ***	0.20 *	0.02	-0.15 *
Sympathy	-0.23 **	0.02	0.32 ***	-0.05
Autic	-0.41 ***	0.07	0.09	-0.06
Alloic	-0.10	0.12	0.24 **	-0.12
Autic Mastery	-0.41 ***	0.05	-0.16 *	-0.12
Autic Sympathy	-0.28 ***	0.01	0.25 **	0.01
Alloic Mastery	-0.11	0.23 **	0.16 *	-0.12
Alloic Sympathy	-0.07	-0.03	0.27 ***	-0.10
N=168. Significance Indicators: *p<0.05; **p<0.01; ***p<0.001				

These relationships were further tested using Multivariate Analysis of Variance (MANOVA) F-tests, and subsequent univariate t-tests, to evaluate AMSP variables (including telic, paratelic, conforming, negativistic, and the four transaction pairs) across MBTI dichotomies. The purpose of this investigation was to determine whether AMSP mean scores for individual states and transaction pairs differ significantly across MBTI dichotomies (e.g., do those with an MBTI preference for judging report different average AMSP telic scores than those with an MBTI preference for perceiving?). All omnibus MANOVAS were significant, allowing the use of univariate t-tests for subsequent tests. T-test results were identical to the MANOVA results below.

Table 7 presents all statistically significant relationships detected through these tests. For example, this table shows that MBTI extraverts reported being in the paratelic motivational state more often than introverts, at a significance level of $p < 0.001$.

Table 7 – MANOVA Analysis: AMSP Against MBTI

N=168	MBTI Scales			
	Extraversion-Introversion	Sensing Intuition	Thinking-Feeling	Judging-Perceiving
AMSP Scales				
telic		N>S *		J>P ***
Paratelic	E>I ***	N>S *		P>J ***
Conforming		S>N *	F>T **	
Negativistic		N>S **		P>J **
Mastery	E>I ***	N>S *		J>P *
Sympathy	E>I **		F>T ***	
Autic (Self)	E>I ***			
Alloic (Other)			F>T **	
Autic Mastery	E>I ***		T>F *	
Autic Sympathy	E>I ***		F>T **	
Alloic Mastery		N>S **	F>T *	
Alloic Sympathy			F>T ***	

Significance Indicators: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

These statistical results suggest a number of relationships between the psychological type preferences reported by participants, and the state dominances reported by the AMSP. Selected significant findings are listed below; importance and implications are considered in the following section.

The three findings listed below were considered most significant from this component of the study. Findings were deemed “most significant” if they met the following criteria: (1) Both the MANOVA F-test and T-test assessing AMSP mean differences across MBTI preference categories

resulted in a p-value <0.001; and (2) mean score on an individual AMSP scale differed by more than two points between MBTI preferences (e.g., judges reported a mean telic AMSP score of 23.6, more than two points higher than the perceivers' mean score of 21.1 on the same scale).

- MBTI judges reported being in the telic state more frequently than perceivers, and MBTI perceivers report being in paratelic state more frequently than judges.
- MBTI feelers report being in sympathy and alloic-sympathy states more frequently than MBTI thinkers.
- MBTI extraverts reported being in autic state, autic-mastery, and autic-sympathy states more frequently than introverts.

Study findings concerning extraversion were generally consistent with Apter et al's 1998 study assessing the correlation between MBTI extraversion and the Motivational Style Profile, an expanded version of the AMSP.

Given some of the overlap in these results, and the fact that validated MBTI full types (e.g., all four preferences for each individual) were available as a data source, the relationships presented above were analyzed further using MBTI sub-samples, based on preference combinations (e.g., Extraverts who also have a preference for Feeling, etc). The statistical test used for this exploration was one way ANOVA, with all pairwise contrasts and Tukey error protection (at 95% Confidence Level). Again, we found a number of statistically significant relationships, consistent with the summary results above. For example, Extraverted Feelers scored significantly higher AMSP scores on the alloic, autic, and sympathy scales and their transaction pairs.

4. Discussion

The empirical comparison between the AMSP dominant motivational states and the MBTI preferences revealed a number of relationships between the instruments, none of which contradict the underlying respective theories.

One of the most compelling relationships seen in the study was on the MBTI Judging-Perceiving scale when assessed against the AMSP Means-Ends domain (telic and paratelic states). The data clearly suggest that those with a preference for judging on the MBTI report spending more time in the telic motivational state and less time in the paratelic state, whereas perceivers tend towards the opposite, with more time spent in the paratelic motivational state and less in the telic.

In this case, the clear statistical relationships seen above are highly consistent with their underlying respective theories. For example, those validating a judging preference on the MBTI tend to prefer seeking closure and decision-making in the external world; this can manifest itself through behaviors that are directive, structured, ordered, and decisive (Kroeger et al, 2002). This orientation is highly compatible with the goal achievement orientation and motivation residing in reversal theory's telic state. In the telic state, one is concerned with deferred gratification in the interest of important or long-term goal accomplishment (Apter,

2001). In this state, an increase in arousal, such as that presented by new or unanticipated data, is seen as negative – consistent with the judger’s preference not to be distracted from a direct path toward the goal.

Conversely, those validating a preference for perceiving on the MBTI tend to prefer remaining open to new data, preferring the process and flexibility of remaining adaptable to new options or information. Behaviorally, perceivers tend to exhibit more adaptability, flexibility, and may be more tentative in their external decision-making process. This is fully consistent with the paratelic state of reversal theory, which literally means “beside the goal” (Apter, 2001). In the paratelic state, motivation comes from the passion of the process or activity itself, with arousal – such as that provided by new data - seen as a welcome part of the journey.

The relationship between an MBTI preference for feeling, and correspondingly higher mean scores on the AMSP sympathy and alloic-sympathy scales is also consistent with the underlying theories. Those reporting a feeling preference on the MBTI tend to prefer subjective decision-making, based on personal values, and the needs of the people involved. (This is in contrast to “Thinking Deciders,” who tend to make decisions more objectively and impersonally, focusing on cause-effect relationships.) The finding that feelers report spending more time in the sympathy state, which is motivated towards caring and interpersonal connection appears consistent with the preference for making decisions in this interpersonally oriented context.

The implications of the relationships between the MBTI preference for extraversion and the correspondingly higher AMSP scores on the autic scale and autic-driven transaction pairs is less clear, though also not necessarily incompatible with the underlying theories. In the autic state, one is motivated by individual needs. At its best, this may exhibit itself behaviorally as self-reliance and personal accountability; at its worst, this may appear as selfishness. It is unclear why these states may be experienced more often by extraverts than introverts, though the generally higher AMSP scores reported by extraverts across the state scales may point to the external behavioral questions on the AMSP, consistent with its phenomenological roots. Because introverts prefer to gain energy by contemplating internal concepts and ideas, they may generally report lower scores on surveys written in behavioral terms such as the AMSP.

Other statistically significant results not explored in depth here may prove useful for practitioners interested in combining MBTI use with a new approach to behavioral change management. For example, our finding that MBTI sensors spend generally more time in the conforming state (motivated by belonging and adherence to rules), and that intuitives spend generally more time in the negativistic state (motivated by breaking out of the rules) may help point the practitioner currently using psychological type to new tools for helping clients respond differently to institutional power structures. This is an area not addressed directly through psychological type, but may be accessed more easily by combining the two theories, to reflect a more complex and complete view of human behavior.

Ultimately, understanding motivational states and reversals may provide a mechanism for accessing and developing psychological type preferences and non-preferences more easily -

bridging the divide between stable personality preference and fluid motivational state. Using the MBTI and the AMSP together might therefore illuminate both “where I generally start” and “how I can change in this moment,” both valuable insights for better self-management.

References

Apter, M.J., Ed (2001). *Motivational Styles in Everyday Life: A Guide to Reversal Theory*. Washington, DC: American Psychological Association.

Apter, M.J. (2003) *Technical Manual for the Apter Motivational Style Profile*. Manassas, VA: Apter International.

Apter, M.J., Mallows, R. and Williams, S. (1998). The Development of the Motivational Style Profile. *Personality and Individual Differences*. 24:1, 7-18.

Kroeger, O., Thuesen, J. and Rutledge, D.H. (2002). *Type Talk at Work: How the 16 Personality Types Determine Your Success on the Job*. New York, NY: Dell Publishing.

Myers, I.B., McCaulley, M.H., Quenk, N.L., and Hammer, A.L. (1998). *MBTI Manual*. Palo Alto, CA: Consulting Psychologists Press.