

dcumen®

WorkStyles™

**Technical Report on
Methods and Validity**



About Human Synergistics

Since 1971, we have developed and provided high-quality assessments and simulations for individuals, leaders, teams, and organizations to actualize their potential. While we're probably best known for our *Desert Survival Situation*[™] and *Organizational Culture Inventory*[®] (the world's most widely used culture survey), our impact transcends that reputation. Our emphasis on measuring the relationship between human behaviors and performance has allowed us to help millions of individuals achieve self-knowledge and thousands of organizations understand their operating cultures and relationship to outcomes such as profitability, employee satisfaction, quality of service, and teamwork.

We proudly serve both the business and academic communities, including clients in public, private, and not-for-profit organizations, human resource and organizational development professionals, internal and external consultants, and educational institutions. Our staff's commitment to providing the highest quality products and services has enabled us to establish long-term relationships with our clients and build our business based primarily on referrals and our reputation.

Research and Development by: The Human Synergistics and Acumen Development Teams on the basis of research by Peter D. Gratzinger, Ph.D. and Robert A. Cooke, Ph.D. Copyright © 2013 by Human Synergistics International.

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Foreword

This document provides detailed information about the development, psychometric properties, and method of reporting results of **ACUMEN[®] Leadership WorkStyles[™] (LWS)** and **ACUMEN[®] Team WorkStyles[™] (TWS)**. In the spirit of the Standards for Educational and Psychological Testing published by the American Psychological Association, National Council on Measurement in Education and American Educational Research Association in 1999, this report is intended to inform the user about the *WorkStyles* instrument.

In an effort to increase readability, this document has an emphasis on narrative interpretation, with tables and basic statistics to support conclusions. Contact Human Synergistics, Inc. if you have further questions about our research methods.

1. Purpose of WorkStyles

ACUMEN® *WorkStyles* is a development instrument based on Human Synergetics' *Life Styles Inventory*™. The *WorkStyles* assessment is intended for use as a feedback tool for stimulating and guiding individual development. It measures thinking and behavior styles that affect leadership and team-member effectiveness. *WorkStyles* feedback provides leaders and team members with valuable insight into how their habitual motivational styles influence their working styles. ACUMEN® **Leadership WorkStyles™ (LWS)** compares the assessment results to leadership/managerial norms and provides feedback about how an individual's motivational styles play out in a leadership and managerial role. ACUMEN® **Team WorkStyles™ (TWS)** compares the assessment results to individual contributor (non-managerial) norms and provides feedback about an individual's working style in relation to individual task accomplishments and team contributions.

Participants complete self-assessments and request feedback from others in the company. Assessment responses are collected by means of web-based or paper-and-pencil questionnaires. The assessment data are processed to provide meaningful, personalized feedback. The overall results are presented in a graphic profile (called a circumplex) accompanied by a narrative report describing the productive and counterproductive aspects found in that profile. The report describes these productive and counterproductive aspects in the context of leadership or team member activities and tasks.

The purpose of ACUMEN *WorkStyles* reports is to provide developmental feedback to the participating individuals. The *WorkStyles* **self-assessment** provides information from the participant's self-perceptions; this information produces a **Self-Report**. The *WorkStyles* **description-by-others assessment** provides information about the participant from the perceptions of *at least* four others; a **Feedback Report** gives the participant feedback from others and requires that the self-assessment instrument also be used for comparative purposes. A group of participants' self- and description-by-others assessment information can be compiled in a **Composite Report** to provide a sense of the styles typical within a particular group.

2. Instrument Background

The assessment component of ACUMEN *WorkStyles* is derived from a long line of research on how needs, attitudes, and personal orientations influence human behavior in general and on-the-job effectiveness in particular. Some of this research dealt with the development of theories of personality, as represented by the work of Freedman, Leary, Ossorio, and Coffey (1951), Leary (1957), and Rogers (1961). Other research explored human needs and motivation, as represented by the work of Maslow (1954) and McClelland (1961). Still other research examined leadership and management behavior, as described by Stogdill (1963).

In particular, Acumen International based the *WorkStyles* assessment instruments on conceptual and empirical research into a circumplex or configurational model of personal orientations developed by Human Synergetics International (Lafferty, 1973; Cooke and Lafferty, 1981). While other circumplex models have been developed (Wiggins, 1979; Conte and Plutchik, 1981), *WorkStyles* is directly based on Lafferty's adaptation of personality concepts for application in business environments. Human Synergetics published his work as *Level I: Life Styles Inventory, Self-Description* (Lafferty, 1973) and *Level II: Life Styles Inventory, Description-by-Others* (Lafferty, 1976). Human Synergetics has used the *Life Styles Inventory* since 1973 with strong acceptance of its usefulness in management and training development.

WorkStyles is an updated version of ACUMEN, which was Acumen's first adaptation of the *Life Styles Inventory (Levels I and II)* (see Warren and Gratzinger, 1990). Beginning in 1984, Acumen International and Human Synergetics extensively analyzed and re-standardized the *Life Styles Inventory (Levels I and II)* to produce the assessment tools and leadership development paradigms used in ACUMEN. The *Level I* and *Level II Life Styles Inventory* had very good internal scale reliability and rich databases of thousands of individual records, including demographic and organizational data, stressful life events and symptom of strain data, and effectiveness descriptions. The adaptation of the instrument built on the "inherited" validity of the scales and was designed to maximize the positive psychometric properties the scales offered. As a consequence of both revising the instruments and using computer technology, the ACUMEN instruments were somewhat different from the *Life Styles Inventory (Levels I and II)*. One difference was that ACUMEN had 10 items per scale, whereas both *Life Styles Inventory (Levels I and II)* had 20. The process of reducing the number of items by 50% led to improved within-scale reliability. Other minor differences involved the renaming of certain scales; for example, "Avoidance" was renamed "Apprehension". The most important contribution of ACUMEN, however, lay in the development of a personality system that assessed a combination of styles to provide rich and insightful interpretations of an individual's profile.

Acumen International released several versions of ACUMEN, differing in terms of the intended audience, report contents, and the technology used to gather data and produce reports:

VERSION	YEAR	CHARACTERISTICS
ACUMEN Insight for Managers	1985	Management self-assessment
ACUMEN Group Feedback	1987	Management multirater assessment
ACUMEN Educational Version	1988	Student self-assessment
COCKPIT 2000	1989	Flight crew multirater assessment
ACUMEN Report Writer	1992	Management self-and-feedback report writer

WorkStyles is a successor to the ACUMEN instruments. In 1993, Acumen International released the first version of WorkStyles, created for salespeople and initially called Sales ACUMEN (see Hudy and Guest, September 1993). Also in 1993, Acumen International released the second version of WorkStyles, created for individual contributors and team members (see Hudy and Guest, December 1993). The main differences between WorkStyles and ACUMEN are:

- WorkStyles uses a five-point response scale (“Not at all” through “To a great extent”) whereas ACUMEN used the three-point response scale from the *Life Styles Inventory 1 and 2* (“Essentially unlike this person” through “Like this person most of the time”).
- WorkStyles has fewer assessment items than ACUMEN (94 versus 120, respectively), resulting from a strategy aimed at reducing the number of items while maintaining a specified level of within-scale consistency.
- WorkStyles uses some new work-related items, which were not in the original ACUMEN or *Life Styles Inventory* (Levels I and II).
- WorkStyles uses the same item set for both self-description and description-by-others, whereas ACUMEN used slightly different item sets for the two types of responses.

In April 2004, Acumen International, the publisher of WorkStyles, entered into an exclusive licensing agreement with Human Synergistics International, their original partner in creating the ACUMEN instruments. The agreement reunited, after 20 years, ACUMEN WorkStyles with the instrument on which it is based, the *Life Styles Inventory*, and other Human Synergistics products including the *Organizational Culture Inventory*® (Cooke and Lafferty, 1987). This reunion permitted the updating of Acumen WorkStyles and its re-alignment with the *Life Styles Inventory* circumplex, which had been modified and improved over the two previous decades.

In January 2007, Human Synergistics released ACUMEN WorkStyles 2007, which fulfilled the goal of integrating the updated circumplex into WorkStyles’ highly personalized reports. In addition, the WorkStyles 2007 reports utilize the latest technologies, resulting in improved online assessment management and report-processing structures.

With respect to the circumplex, changes for ACUMEN WorkStyles 2007 include:

Style (Scale) Names:

- Humanistic-Helpful *changed to* Humanistic-Encouraging
- Affiliation *changed to* Affiliative
- Dependence *changed to* Dependent
- Apprehension *changed to* Avoidance*
- Competition *changed to* Competitive
- Perfectionism *changed to* Perfectionistic
- Self-Actualization *changed to* Self-Actualizing

*While most of the changes are grammatical, “Apprehension” was changed back to “Avoidance” to render the scale name more behavioral. In psychological sciences, Apprehension is defined as anxiety or a state of strain. While Apprehension and Avoidance are strongly related and might be described in similar ways, the behavioral style of Avoidance leads to the state of Apprehension (and possibly *vice versa*). Given that WorkStyles measures styles rather than states, the scale name was changed to make it consistent with the other 11 scale names.

Orientations:

The outer ring of the circumplex identifies four personal Orientations along two underlying dimensions.

- Satisfaction *versus* Security Needs
- People *versus* Task Orientation

Factor (Groups of Styles) Names:

The styles fall into three Factors or Groupings and are renamed.

- Satisfaction-Oriented *changed to* Constructive Styles
- People-Security *changed to* Passive/Defensive Styles
- Task-Security *changed to* Aggressive/Defensive Styles

Scale Grouping Colors:

Two of three scale grouping colors are changed to align with the Human Synergistics circumplex.

- Constructive Styles – Green *changed to* Blue
- Passive/Defensive Styles – Yellow *changed to* Green
- Aggressive/Defensive Styles – Red is unchanged

Concentric Circles:

The WorkStyles profile previously included four concentric circles (25th, 50th, 75th, and 99th percentiles). Two circles were added to make it consistent with other Human Synergistics profiles.

- Added 10th percentile concentric circle
- Added 90th percentile concentric circle

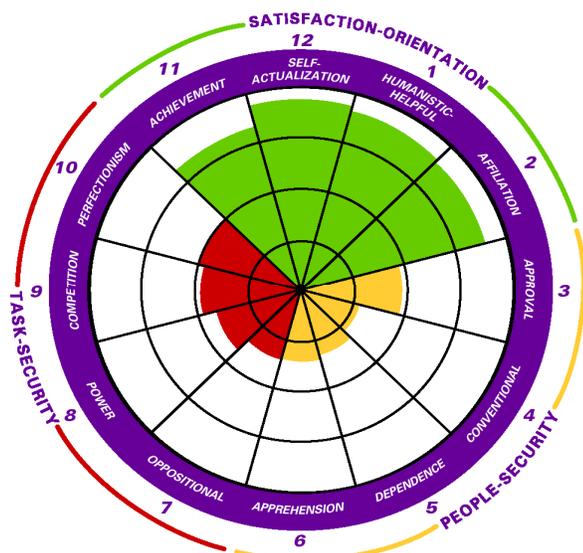
In addition to the changes in the circumplex, some new features were added to WorkStyles 2007 reports:

- Self vs. Feedback Profile – provides single-page convenience for the comparing of self-perceptions and description-by-others’ feedback.

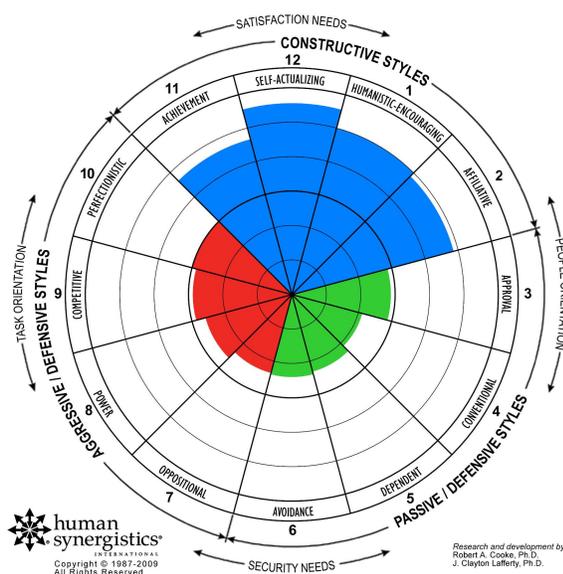
- Multiple-Boss breakouts – multiple-boss breakouts are presented and labeled with the boss’ names. Also, only breakout profiles for which valid data are available are shown; no blank circumplexes are presented.
- Improved .PDF quality – all graphics and profiles are refined and generate higher-quality color results.

For comparison, below are both the former and newer WorkStyles circumplexes:

WorkStyles 1997



WorkStyles 2007



The ACUMEN WorkStyles 2007 release successfully integrated the Human Synergistics circumplex while maintaining the instrument’s sound statistical foundation, rich underlying typology structure, and highly personalized feedback. These features provide our clients a broader and unified diagnostic product line—focusing on groups and organizations as well as individuals.

In 2013, Human Synergistics released an enhancement of ACUMEN Leadership WorkStyles that included improvements with assessments, administration, and reporting. The primary enhancements include:

- **Larger norm base** – Increased to 4,500 focal leaders, including greater international representation
- **Updated book references in suggestions for development** – Increased relevance with current leadership development resources
- **Revised Spread of Opinion using new norms** – Improved perspective by displaying the level of agreement based on normed standard deviation
- **Automated assessments and reminders sent directly to leaders and respondents** – Simplified distribution where invitations are sent directly to focal leaders and all respondents

- **Assessment allows missing items** – Improved flexibility by allowing respondents the option to not complete an item

Since the introduction of the first ACUMEN program, *Insight for Managers*, the ACUMEN and *WorkStyles* instruments have been widely used by internal and external assessment and business consultants, with very positive feedback indicating strong validity. More than one million leaders, managers, and other professionals have used one or more of the ACUMEN programs, and this number is expected to increase significantly with the new release of *WorkStyles*.

3. Instrument Development

The *WorkStyles* instrument is founded on ACUMEN, which in turn was an adaptation of the *Life Styles Inventory (Levels I and II)* for computer application. As previously noted, the *Life Styles Inventory* measured a well-developed circumplex model of thinking and behavior styles. It had good internal reliability of the scales and a database of 8,000 individual records with demographic and organizational data.

From *Life Styles Inventory* to ACUMEN

The goals of the original ACUMEN adaptation in 1984-1985 were to create a computerized self-assessment tool by reducing the number of items in the *Life Styles Inventory*; improving the homogeneity within scales; restandardizing with new, updated managerial norms; and developing an array of thinking styles for use in interpreting and reporting results. For that purpose, the ACUMEN Self-Assessment standardization sample consisted of 1,000 managers randomly selected from a larger sample of 5,000 respondents who had used *Level I: Life Styles Inventory* in 1979. The managers were from large organizations, including manufacturing, public utilities, government agencies, and public accounting firms. To create the ACUMEN instrument, we winnowed items from the *Level I: Life Styles Inventory* on the basis of within-scale cluster analysis, factor analysis, and internal consistency reliability coefficients. Correlations were computed between each item and all 12 scales to identify the items that performed most effectively from a convergent/discriminant validity perspective. This process identified the 10 items in each scale with the most discriminating power and intensity. The 12 scales were themselves examined using cluster analysis to determine which scales could be grouped together. The resulting six clusters were used to form the basis of the style combination system used in reporting results.

The goals of the ACUMEN Group Feedback adaptation in 1987 were similar to those of the first ACUMEN adaptation, but for computerized multirater assessment instead of self-assessment. The ACUMEN Group Feedback standardization sample consisted of 556 managers who had been rated by 2,922 knowledgeable others (using *Level II: Life Styles Inventory*) in 1983 and 1984. The data included not just descriptions of thinking styles, but also independent descriptions of managerial effectiveness for the purpose of examining the “Effective Manager” profile. The same types of statistical data analyses for the ACUMEN Group Feedback adaptation were used for the Self-Assessment adaptation: cluster analyses, factor analyses, within-scale reliability analyses, and item-scale convergent/discriminant correlational analyses. In addition, because interrater reliability is a vital concern in multirater instruments, we used analysis of variance and intraclass correlations to examine the amount of agreement among the raters who assessed each Group Feedback participant.

From ACUMEN to WorkStyles

The primary goals of the 1993 *WorkStyles* adaptation were to move to a five-point response scalar and to update the wording of several assessment items while still measuring the same 12 thinking and behavior styles.

As noted above, the ACUMEN instruments were composed of a subset of the items in the *Life Styles Inventory, Level I*, which dates back to the early 1970s and beyond. A few of these items used colloquialisms, which were no longer current. For that reason, we elected to add new items to the existing 120 ACUMEN items, where each new item was crafted to complement an existing scale. The intent was to improve the overall readability of the items and improve the internal consistency of the scales while preserving the conceptual meaning of each scale and the relationships among scales. Therefore, the first version of the ACUMEN *WorkStyles* instrument contained a total of 179 items measuring aspects of thinking styles.

Also, ACUMEN still utilized the *Life Styles Inventory's* three-point response scale ("*Essentially unlike you*", "*Like you quite often*", and "*Like you most of the time*"), which many people found disquieting because it felt unbalanced—the middle of the three response alternatives did not feel like the midpoint of the scale. Therefore, a five-point scale was adopted for *WorkStyles*. Participants were instructed to rate how well the following words or phrases described them using a response scale anchored by "*Not at all*" at the low end, "*Somewhat*" at the midpoint, and "*To a great extent*" at the high end.

The use of the new response scalar and the new items required the collection of a new instrument-standardization sample. Data for this sample were collected between 1993 and 1996 from participants working in more than 150 organizations located primarily within the continental U.S. The organizations represent a wide variety of industries, including banking, cable TV, insurance, military, pharmaceuticals, public education, publishing, retail groceries, semiconductor, software, state government, telecommunications, transportation, and utilities. Each of the 2,501 participants completed a self-assessment and collected feedback responses from at least four respondents; a total of 14,370 respondents provided feedback. For most of the participants, the instrument contained 179 items to assess thinking and behavior styles and an additional 9 items (presented only to respondents) to measure on-the-job effectiveness.

The participants in the instrument standardization sample represented a reasonably diverse population. Based on their responses to demographic questions, about 62% were male and about 38% were female. While 21% were younger than 30 years old and 23% were 45 or older, more than half (56%) were between the ages of 30 and 45. About 80% were white, and the remainder was minorities. Almost two-thirds (63%) had graduated from college with a degree; one out of five (20% of the total) had earned a master's or doctorate degree. A large majority (68%) had more than 10

years of work experience; only half (49%) had been in their current job two years or less. The Statistical Appendix to this report contains details of the demographic composition of this sample.

After the *WorkStyles* instrument-standardization sample data was collected, the first statistical procedure was to create 12 scale scores, using all 179 items. Items, which had been used in previous versions of ACUMEN, were included in the same scales in which they had been included previously. Each of the 59 new items was included in the scale for which it had been intended. The results of this process were 12 *a priori* scales measuring thinking and behavior styles.

The second step was to review the *a priori* scales for internal consistency. One item at a time, we removed items, which failed to add to a scale's internal consistency (measured by the alpha coefficient). The explicit goal was to reduce the number of items in each scale while still retaining an internal consistency coefficient of at least .80 in the description-by-others responses. The result was a set of 12 scales which each had fewer items than the corresponding *a priori* scale. These final scales (comprised of a total reduced set of 94 items) range in length from 7 to 9 items per scale. The correlations among these scales were examined to confirm that the scales continued to fit the original circumplex model.

Normative Samples (1997)

Following statistical analysis of the instrument properties, two normative samples from the total set of 2,501 participants who had used the instrument were created. The first sample was composed exclusively of leaders and managers. The second sample was composed of team members—individual contributors who were not managers. These two samples form the bases for the normative comparisons in **Leadership WorkStyles** and **Team WorkStyles**, respectively.

Leadership Sample

The leadership normative sample was drawn from the larger sample of data used for assessing the *WorkStyles* instrument. The data were collected between 1993 and 1996 from leaders and managers located primarily within the continental U.S. They came from more than 70 organizations in a wide variety of industries, including banking, insurance, pharmaceuticals, public education, publishing, retail groceries, semiconductor, software, telecommunications, transportation, and utilities. Each of the 444 leaders had a self-assessment and feedback from at least four respondents; a total of 3,046 respondents provided feedback for the leaders and managers.

The leadership/managerial sample represented a somewhat less diverse population than the total standardization sample, but that reflects the nature of the managerial population at large. Based on the managers' responses to demographic questions, about 74% were male and about 26% were female. Almost two-thirds (about 64%) were between the ages of 30 and 45. About 86% were white, and the remainder was minorities. Just over three-fourths (about 77%) had graduated from college

with a degree; more than a third (about 37% of the total) had earned a master's or doctorate degree. The vast majority (about 84%) had more than 10 years of work experience, although only about 30% had been in their current job more than 5 years. The Statistical Appendix to this report includes details of the demographic composition of this leadership/managerial sample.

Team Sample

The team-member (non-managerial) normative sample also was a subset of the total instrument-standardization sample. Data were collected between 1993 and 1996 from more than 150 companies mostly located in the U.S. Participants worked in a wide variety of industries, including banking, cable TV, insurance, military, pharmaceuticals, public education, publishing, retail groceries, semiconductor, software, state government, telecommunications, transportation, and utilities. Each of the 2,057 participants had a self-assessment and at least four assessments by others. There were a total of 11,324 assessments by others.

As would be expected, the team sample represents a more diverse population than the leadership/managerial sample. About 60% of the team sample was male and about 40% female (the comparable percentages were 74% male and 26% female in the leadership/managerial sample). A quarter (25%) of the participants in the team sample were less than 30 years old, while about a fifth (21%) were 45 years or older. Members of minority racial/ethnic groups comprised 22% of the team sample (compared to 14% in the leadership/managerial sample). Team members tended to have less formal education than managers: Only 60% had completed a college degree, and only about one out of six (17% of the total) had earned a master's or doctorate. Still, almost two-thirds (65%) had more than 10 years of work experience. More details about these and other demographic characteristics of the team sample can be found in the Statistical Appendix.

Normative Sample (2013)

Human Synergetics updated the leadership sample in 2013 to reflect the globalization of the workforce. To this end, the 2013 norming group of leaders and managers increased tenfold and includes respondents from around the world. This sample forms the base for the normative comparisons in *Leadership WorkStyles*.

Leadership Sample

The data used for the 2013 norming were collected between 2002 and 2012 from leaders and managers located around the world. While the majority of the leaders and managers were from the continental U.S. and Canada (69%), 29% of the respondents were from Europe (primarily Romania, UK, Sweden, Poland, and Germany), and 2% were from Asian countries. They came from more than 100 organizations in a wide variety of industries, including banking, insurance, pharmaceuticals, public education, publishing, retail groceries, semiconductor, software, telecommunications,

transportation, and utilities. Each of the 4,500 leaders and managers had a self-assessment and feedback from at least four others; a total of 44,297 respondents provided feedback for the leaders and managers.

Based on the leaders' responses to demographic questions, about 63% were male and about 37% were female. Over one-half (about 57%) were between the ages of 30 and 45. About 70% were white, and the remainder was minorities. Over three-fourths (about 85%) had graduated from college with a degree; almost one-half (about 48% of the total) had earned a master's or doctorate degree. About 42% had more than 10 years of work experience, although only about 35% had been in their current job more than 5 years. The Statistical Appendix to this report includes details of the demographic composition of this leadership/managerial sample.

4. Instrument Content

ACUMEN *WorkStyles* measures 12 different thinking and behavior styles, as outlined in **Table 1**. Each style is measured by several **items**, which are combined into a **scale**.

- An **item** describes a specific characteristic or behavior that is indicative of the thinking style being measured. For example, “*Enjoys teaching others*” and “*Patient with people*” are two items characteristic of the Humanistic-Encouraging style. The items used to measure a particular style are combined to create a scale.
- Each **scale** is a measure of a specific style. The score for the scale is based on the average rating of the items that are characteristic of that style. For example, the Humanistic-Encouraging scale consists of seven items.

The 12 scales are placed in a specific order (see **Table 1**), such that the characteristics and behaviors represented by one scale are similar to, or work with, the scales that immediately precede or follow it. In the *WorkStyles* circumplexial model, scale location is proportionate to correlations between scales. That is, neighboring scales on the circumplex have higher intercorrelations than more distant scales.

- For example, Self-Actualizing behavior frequently occurs in conjunction with Humanistic-Encouraging behavior. Therefore, when the 12 scales are presented as a circumplex, as in **Figure 1**, Self-Actualizing appears next to Humanistic-Encouraging, indicating the nature of the relationship between the two scales.

A circumplex, illustrated in **Figure 1**, provides the most useful way to communicate scale scores. Conveniently, the 12-scale circumplex is visually similar to a clock face, which helps reinforce the concept that the instrument is based on a circular theoretical model in which scales next to each other are more similar while scales opposite each other are more different.

Elements of a circumplex include six concentric circles, 12 segments, percentile score areas, and three score ranges.

- The concentric circles represent the 10th, 25th, 50th, 75th, 90th, and 99th percentiles. The 12 wedge-shaped segments correspond to the 12 scales.
- The score on any scale is shown by extending a shaded area out from the center of the circumplex. The longer the extension, the higher the percentile score. The percentile score is calculated by converting the raw score on the scale to a percentile score in relation to the norms established in the appropriate standardization sample (either managers or individual contributors). So, for example, the 1 o'clock Humanistic-Encouraging scale in **Figure 1** shows a

percentile score of about 85, meaning the score for this person is as high as or higher than 85% of the people in the norm sample.

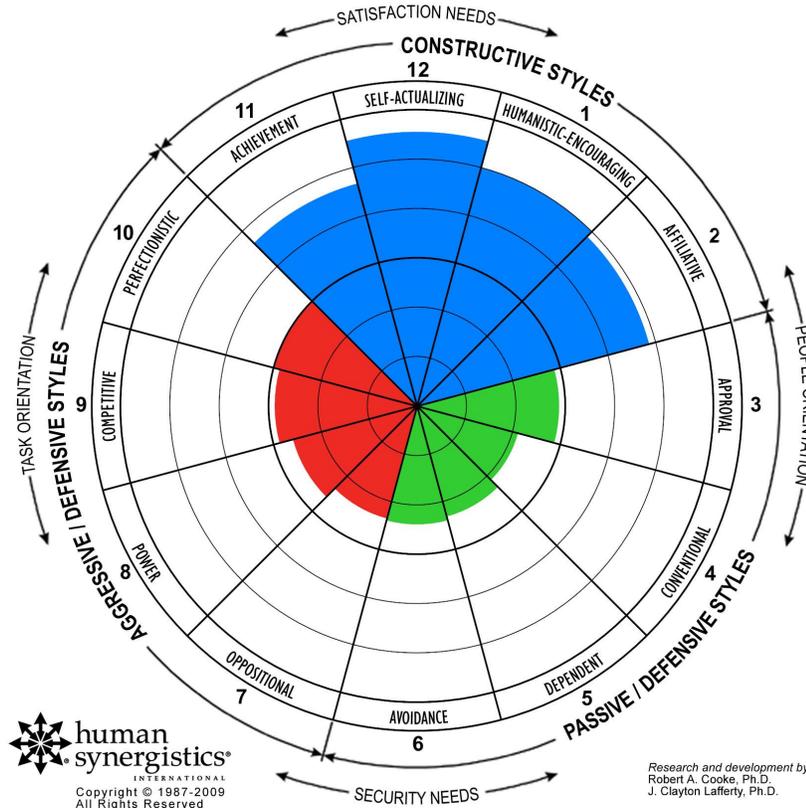
- Percentile scores are divided into three ranges on the circumplex. The Low range includes scores at or below the 25th percentile, the Medium or average range includes scores between the 25th and 75th percentiles, and the High range includes scores at or above the 75th percentile.

In addition to the items that measure the 12 thinking and behavior styles, the *WorkStyles* instrument asks for a small amount of additional information. Participants completing a self-assessment are asked to describe themselves by answering a few demographic questions. (Demographic information is used for research purposes, such as norm sampling; a participant's responses have no direct effect on his or her report or results.) People completing a description-by-others assessment provide an indication of their relationship to the participant they are describing (supervisor, peer, direct report, etc.) and answer a few questions about the participant's on-the-job effectiveness (used for validation research). Respondents also have the opportunity to provide observations or comments for the participant's use in planning his or her professional development.

Table 1:
Description of the 12 ACUMEN WorkStyles
Thinking and Behavioral Styles

1. **Humanistic-Encouraging.** Measures your inclination to see the best in others, to encourage their growth and development, and to be patient and supportive.
 2. **Affiliative.** Measures the degree to which you exhibit friendly, sociable, and outgoing behaviors.
 3. **Approval.** Measures the extent to which you seek others' approval and support in order to feel secure and worthwhile as a person.
 4. **Conventional.** Measures your inclination to conform, follow the rules, and meet the expectations of those in authority.
 5. **Dependent.** Measures your tendency to be compliant, passive, and reliant on others.
 6. **Avoidance.** Measures the extent to which your actions suggest self-doubt, apprehension, and a preference to avoid difficult situations.
 7. **Oppositional.** Measures your tendency to take a critical, questioning, and somewhat cynical attitude.
 8. **Power.** Measures the extent to which you come across as authoritarian and controlling.
 9. **Competitive.** Measures the extent to which you portray self-centeredness and a need to win and to be seen as the best.
 10. **Perfectionistic.** Measures your tendencies to seek perfection and to base your self-worth on your assessment of your own performance.
 11. **Achievement.** Measures the extent to which you set challenging goals, work to achieve those goals, and have a positive impact on events around you.
 12. **Self-Actualizing.** Measures the extent to which you demonstrate self-esteem, an interest in self-development, and a drive to learn about and experience life to the fullest extent.
-

Figure 1.
Example of ACUMEN WorkStyles Circumplex



human synergistics
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Research and development by:
 Robert A. Cooke, Ph.D.
 J. Clayton Lafferty, Ph.D.

The WorkStyles Scales

1. Humanistic-Encouraging

supportive, motivates others, patient

2. Affiliative

friendly, warm, trusting

3. Approval

needs approval from others, forgiving, overly generous

4. Conventional

conforming, reliable, restrained

5. Dependent

a follower, deferential, submissive

6. Avoidance

apprehensive, self-doubting, tense

7. Oppositional

questioning, negative, critical

8. Power

authoritarian, controlling, easily angered

9. Competitive

boastful, self-centered, needs to win

10. Perfectionistic

demanding, results-oriented, driven

11. Achievement

enjoys challenges, strives for excellence, decisive

12. Self-Actualizing

enthusiastic, creative, confident

5. Statistical Characteristics

Descriptive Statistics

WorkStyles assessment items are scored on a five-point scale, anchored by "Not at all" at the low end, "Somewhat" at the midpoint, and "To a great extent" at the high end. Descriptive statistics about the 12 scales are expressed in terms of the mean response per item, so the possible range is from 1 to 5. Because the managerial and individual contributor populations differ significantly from each other, we analyzed them separately in order to create comparative norms.

Leadership Norms

Descriptive statistics from the leadership/managerial sample are presented in **Table 2**. As seen in **Figure 2**, the more socially desirable scales (such as Humanistic-Encouraging or Affiliative) generally have higher means, and the less socially desirable scales (such as Oppositional or Power) have lower means. This is to be expected; humans live in social groups where socially desirable behaviors are reinforced and become more frequent, while socially undesirable behaviors are penalized and become less frequent. Most people learn to express themselves in positively valued ways and to suppress impulses that are likely to be viewed as unsociable. Furthermore, open and direct criticism of other people tends to create social friction, which is undesirable ("If you can't say something nice, don't say anything at all"). Therefore, responses are very likely to be higher for socially desirable versus undesirable characteristics, primarily because the desirable behaviors may genuinely occur more frequently but also partly because respondents may be somewhat disposed toward putting a positive slant on their feedback.

In comparing the typical leader self-description to the typical description by a respondent, the most striking observation is that there is **not** a consistent tendency for self-perceptions to be more favorable than others' perceptions. Bear in mind that on some scales (specifically 11, 12, 1, and 2), a **high** score is desirable, but on other scales (3 through 10) a **low** score is desirable. In comparing self- to others' descriptions, we looked for differences of at least .10 raw score units, enough to be considered statistically significantly different ($p < .01$, based on exact t -tests) given the size of the sample and the magnitude of the standard deviations.

- With this frame of reference, self-descriptions differ substantially from descriptions-by-others responses on six of the 12 scales: Humanistic-Encouraging, Approval, Avoidance, Oppositional, Perfectionistic, and Achievement.

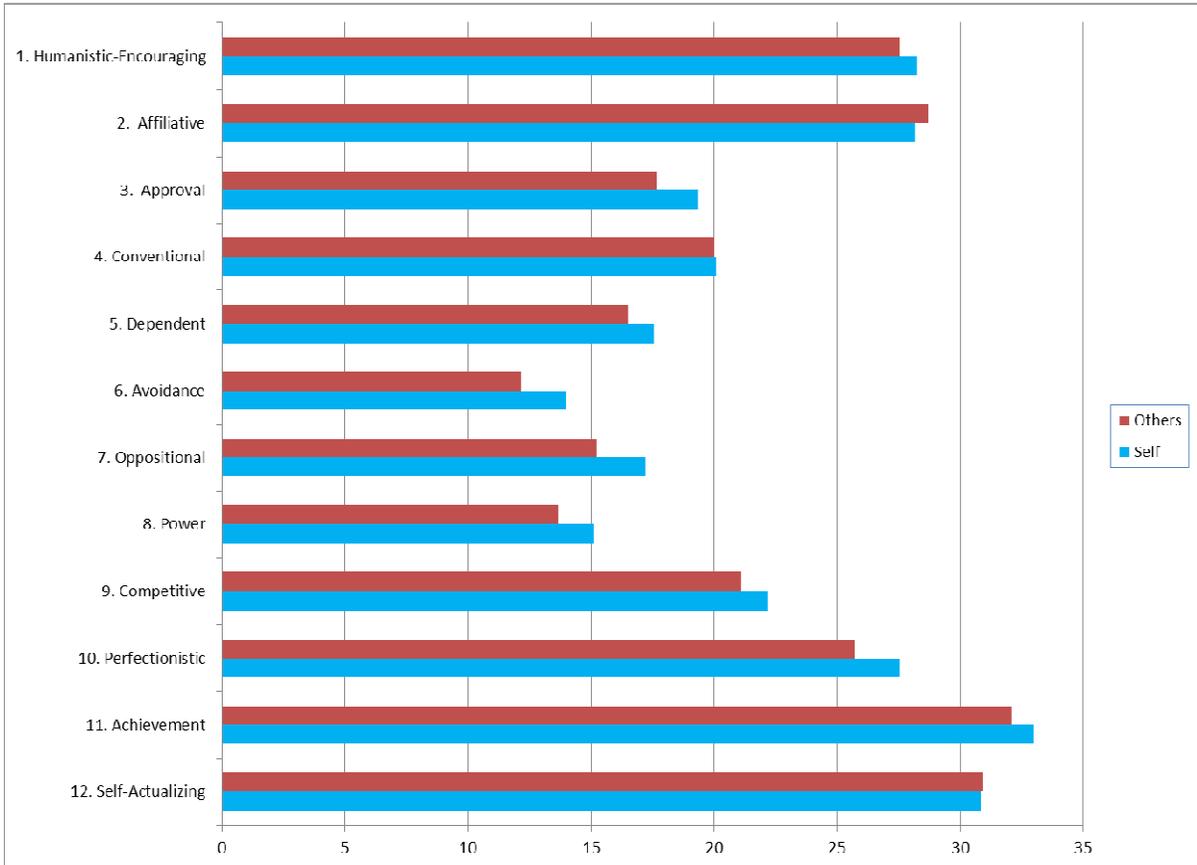
- Of these six scales, the self-descriptions are more favorable on Humanistic-Encouraging and Achievement, but less favorable on Approval, Avoidance, Oppositional, and Perfectionistic.
- The biggest difference by far is on Oppositional, where leaders' self-descriptions average 17.20 while descriptions-by-others average just 15.25. Leaders have a different view of their own opposition toward others—a view not entirely shared by their respondents.
- Across all 12 scales, leaders' self-descriptions could not be described as having a consistent overall pattern of being more favorable than the descriptions-by-others.

Table 2:
Descriptive Statistics for the Leadership WorkStyles Normative Sample

Scale	Self-Assessments (N = 4,500)		Description by Others Assessments (N = 4,500)	
	Mean	SD	Mean	SD
1. Humanistic-Encouraging	28.27	3.76	27.52	3.10
2. Affiliative	28.20	3.90	28.74	3.23
3. Approval	19.32	4.76	17.71	2.53
4. Conventional	20.10	5.05	20.01	3.24
5. Dependent	17.56	4.24	16.51	2.66
6. Avoidance	13.99	4.61	12.16	2.55
7. Oppositional	17.20	4.29	15.25	3.24
8. Power	15.08	4.64	13.65	3.82
9. Competitive	22.16	5.94	21.12	4.62
10. Perfectionistic	27.56	5.67	25.72	3.52
11. Achievement	33.00	4.05	32.12	2.94
12. Self-Actualizing	30.85	4.26	30.93	3.12

Note that there were 44,297 respondents for the 4,500 leaders, with 4 to 60 respondents per leader (average = 9.84 per leader). Respondents were first averaged within each focal leader, so the descriptive statistics reported here reflect the “mean respondent ratings” for the 4,500 leaders.

Figure 2.
Average Responses in Leadership Norm Sample



Team Norms

Descriptive statistics from the team (individual contributor) sample, presented in **Table 3** and illustrated in **Figure 3**, show again that the more socially desirable scales (such as Humanistic-Encouraging) have higher means, and the less socially desirable scales (such as Oppositional) have lower means.

As with leaders, there is not a consistent tendency for team members' self-descriptions to be more favorable than the description-by-others. Remember that a high score is desirable on scales 11, 12, 1, and 2, but a low score is generally desirable on scales 3 through 10. We looked for a difference of at least .10 raw score units between the self- and others' descriptions, a difference considered statistically significant ($p < .01$, based on exact t -tests) given the large sample and the size of the standard deviations.

- Team members' self-descriptions differ substantially from descriptions-by-others on eight of the 12 scales: Humanistic-Encouraging, Approval, Avoidance, Oppositional, Power, Perfectionistic, Achievement, and Self-Actualizing (the same six scales that differ in the managerial sample, plus Power and Self-Actualizing).
- Of these eight scales, the self-descriptions are more favorable on three (Humanistic-Encouraging, Achievement, and Self-Actualizing) but less favorable on five (Approval, Avoidance, Oppositional, Power, and Perfectionistic).
- The biggest differences are on Humanistic-Encouraging, Perfectionistic, and Achievement, where the self-descriptions average more than 0.20 raw score units higher than the descriptions-by-others.
- In general, team members give themselves higher scores—regardless of whether “higher” is more desirable or less desirable. Team members have a more dramatic, expressive view of themselves, and take stronger positions in saying, “Yes, this characteristic is a lot like me.”

**Table 3:
Descriptive Statistics for the Team WorkStyles Sample**

Scale	Self-Assessments (N = 2,057)		Description by Others Assessments (N = 2,057 )	
	Mean	SD	Mean	SD
1. Humanistic-Encouraging	3.98	.58	3.75	.50
2. Affiliative	3.99	.60	3.92	.53
3. Approval	2.78	.73	2.64	.42
4. Conventional	2.38	.60	2.41	.42
5. Dependent	2.27	.60	2.21	.46
6. Avoidance	2.09	.72	1.92	.48
7. Oppositional	2.16	.59	2.01	.50
8. Power	2.04	.70	1.94	.60
9. Competitive	2.31	.68	2.27	.55
10. Perfectionistic	3.01	.65	2.79	.45
11. Achievement	3.94	.57	3.72	.47
12. Self-Actualizing	3.72	.57	3.61	.45

 Note that there were 11,324 respondents for those 2,057 team members, with 4 to 21 respondents per team member. Respondents were first averaged within each focal team member, so the descriptive statistics reported here reflect the “mean respondent ratings” for the 2,057 team members.

Differences between Leadership and Team Norms

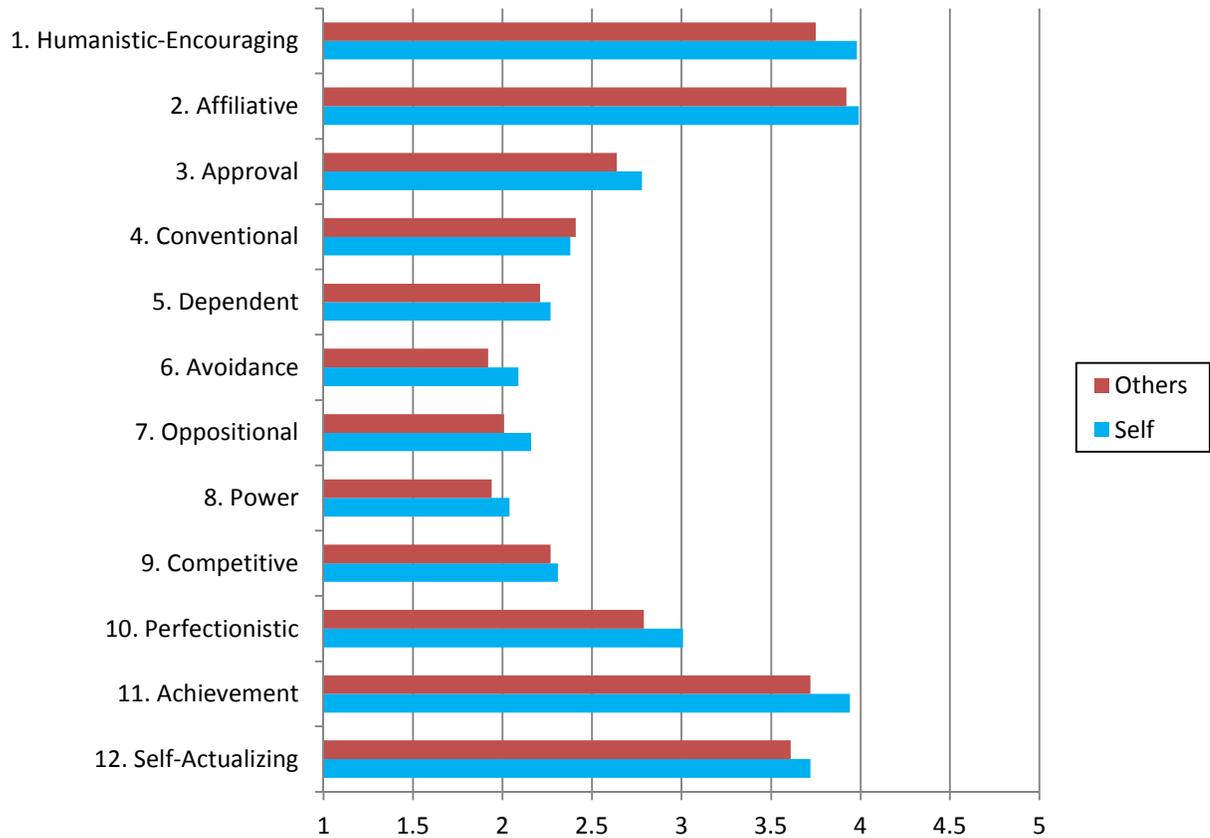
In 1997, a comparison of the normative samples revealed some differences between leaders and individual contributors (team members). Applying *t*-tests (with a criterion of $p < .01$) to the others' responses, we found that:

- leaders are rated significantly **lower** than individual contributor team players on Approval, Conventional, and Dependent. This cluster of scales deals essentially with strong conformity needs and a preference to follow rather than lead
- leaders are rated significantly **higher** than individual contributor team players on Power, Competitive, Achievement, and Self-Actualizing. These scales collectively deal with task orientations, especially personal dominance and the pursuit of measurable results. The largest difference is on Achievement.

The self-descriptions essentially showed the same pattern of differences, although the differences were generally not as large and only four of them were statistically significant (for Conventional, Dependent, Power, and Achievement).

Overall, these findings raise a “chicken-or-egg” question: Are people more likely to be placed in the leadership/managerial role if they have more emphasis on achievement of results and greater and stronger drives for personal dominance? Or does the leadership/managerial role itself induce people to place more emphasis on results and show greater awareness of power/dominance issues? The answer is not obvious.

Figure 3.
Average Responses in Team Norm Sample



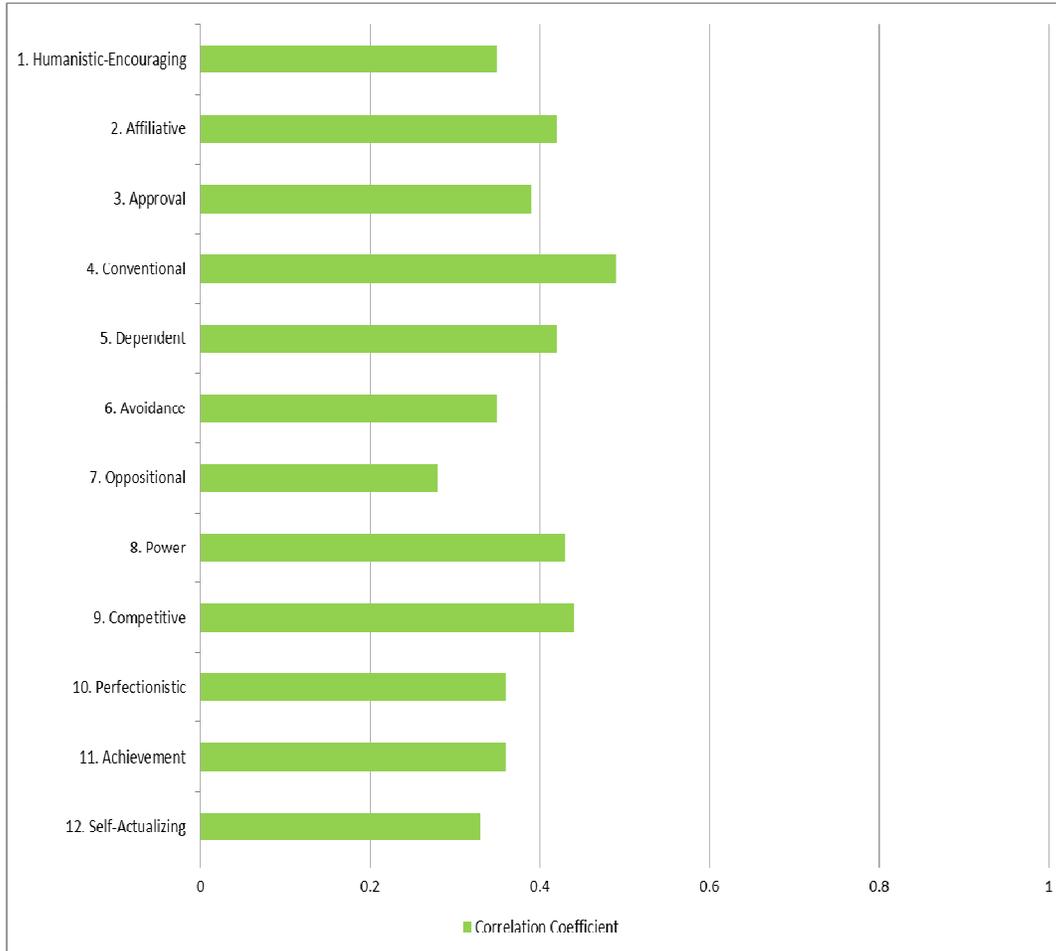
Correlations between Self- and Others' Responses

The relationships between self-descriptions and descriptions-by-others were examined using a sample of 2,500 cases. In an ideal world, correlations between self-descriptions and responses-by-others would be very close to 1.00; each person would perceive him/herself in exactly the same way others do. In such a world, assessment responses from others would be unnecessary, because participants would already be very self-aware. Clearly, we do not live in that ideal world, because the actual correlations between self-descriptions and responses-by-others range between .28 and .49 (see **Table 4** and **Figure 4**). Correlations of this magnitude mean there is a low-to-moderate level of agreement between the two sources. While many people have fairly accurate self-perceptions, a substantial minority describe themselves very differently from the way others do.

Table 4:
Correlations between WorkStyles (LWS and TWS) Self and Others' Responses

Scale	Magnitude of Correlation (N = 2,500)
1. Humanistic-Encouraging	.35
2. Affiliative	.42
3. Approval	.39
4. Conventional	.49
5. Dependent	.42
6. Avoidance	.35
7. Oppositional	.28
8. Power	.43
9. Competitive	.44
10. Perfectionistic	.36
11. Achievement	.36
12. Self-Actualizing	.33

Figure 4.
Correlations between Leadership WorkStyles Self- and Others' Responses



Correlations among Scales

The correlations among the Leadership Work*Styles* scales reveal the pattern of the circumplex (see **Table 5**). That is, scales near each other tend to correlate more highly than scales placed farther apart (bearing in mind that scale 12 "wraps around" to be next to scale 1). This pattern can be clearly seen by examining diagonal regions in a correlation matrix. The correlations tend to be relatively high near the same-scale diagonal (filled with "1.00"s) and to be relatively high near the bottom left-hand corner, but relatively low (even negative) in the broad zone in between.

Table 5:
Correlations among the Work*Styles* (LWS and TWS) Scales

Scale	Scale											
	1	2	3	4	5	6	7	8	9	10	11	12
Self-Assessment												
1. Humanistic-Encouraging	1.00											
2. Affiliative	.65	1.00										
3. Approval	-.02	.13	1.00									
4. Conventional	-.06	.02	.51	1.00								
5. Dependent	-.05	.01	.56	.73	1.00							
6. Avoidance	-.24	-.23	.51	.45	.58	1.00						
7. Oppositional	-.38	-.41	.29	.11	.20	.49	1.00					
8. Power	-.44	-.43	.09	-.12	-.10	.17	.60	1.00				
9. Competitive	-.18	-.08	.27	-.01	-.04	.09	.41	.56	1.00			
10. Perfectionistic	-.01	-.05	.25	.05	.06	.19	.31	.27	.45	1.00		
11. Achievement	.28	.23	-.19	-.43	-.43	-.36	-.13	.09	.27	.31	1.00	
12. Self-Actualizing	.43	.47	-.18	-.43	-.36	-.45	-.25	-.04	.17	.09	.61	1.00
Description-by-Others Assessment 												
1. Humanistic-Encouraging	1.00											
2. Affiliative	.85	1.00										
3. Approval	.01	.13	1.00									
4. Conventional	-.10	-.01	.59	1.00								
5. Dependent	-.07	.03	.64	.83	1.00							
6. Avoidance	-.41	-.38	.52	.49	.60	1.00						
7. Oppositional	-.70	-.73	.10	.00	-.01	.45	1.00					
8. Power	-.68	-.73	-.02	-.18	-.24	.23	.84	1.00				
9. Competitive	-.46	-.47	.16	-.13	-.19	.10	.67	.80	1.00			
10. Perfectionistic	-.15	-.30	.10	.02	-.01	.20	.36	.44	.53	1.00		
11. Achievement	.33	.20	-.25	-.62	-.59	-.44	-.11	.12	.27	.50	1.00	
12. Self-Actualizing	.60	.59	-.14	-.54	-.48	-.58	-.35	-.16	.07	.13	.72	1.00

 Note that there were 24,624 respondents for the 2,500 leaders, with 4 to 60 respondents per leader (average = 9.85 per leader). Respondents were first averaged within each focal leader, so the descriptive statistics reported here reflect the "mean respondent ratings" for the 2,500 leaders.

Scale Factor Structure

The rotated factor structure provides another way of understanding the pattern of relationships among the scales (see **Table 6**). Factor analysis looks for correlations between, and common elements underlying and driving, different scales or styles. Using principal components analysis followed by varimax rotation, essentially the same three factors or groupings emerge for the *WorkStyles* scales as for the ACUMEN: Insights for Managers scales. As would be expected, these factors parallel those identified for the *Life Styles Inventory* (see Cooke, Rousseau, and Lafferty, 1987). The three factors together explain 71.0% of the variance in the *WorkStyles* self-assessment scale scores, and 78.4% of the variance in the description-by-others scale scores. The content of these factors reflects the distinctions between satisfaction *versus* security and people *versus* task orientations and correspond to the Passive/Defensive, Aggressive/Defensive, and Constructive styles identified for other measurement instruments based on the Human Synergistics Circumplex (see **Figure 5**.)

The **Passive/Defensive** factor consists of the Approval, Conventional, Dependent, and Avoidance scales. High scores in these areas indicate needs for the approval and acceptance by others in the workplace in order to feel secure and worthwhile; self-worth is determined by others. Conceptually, this factor represents self-protecting thinking and behavior that promote the fulfillment of *security* needs through interaction with *people*. High scores in the Passive/Defensive factor indicate strong conformity needs and a preference to follow rather than lead. This factor is marked by passive avoidance as a defensive strategy.

The **Aggressive/Defensive** factor consists of the Oppositional, Power, Competitive, and Perfectionistic scales, and reflects self-promoting thinking and behavior used to maintain one's status/position and fulfill *security* needs through *task*-related activities. Self-worth is determined by accomplishments. These styles are based on aggressiveness as a defensive strategy and, as such, tend to be associated with what is commonly called "Type A" behavior. While certain aspects of these styles can promote performance (at least along certain dimensions and over the short term), strong Aggressive/Defensive tendencies can lead to symptoms of strain and indicate a need to reevaluate one's approach to work, people, and life.

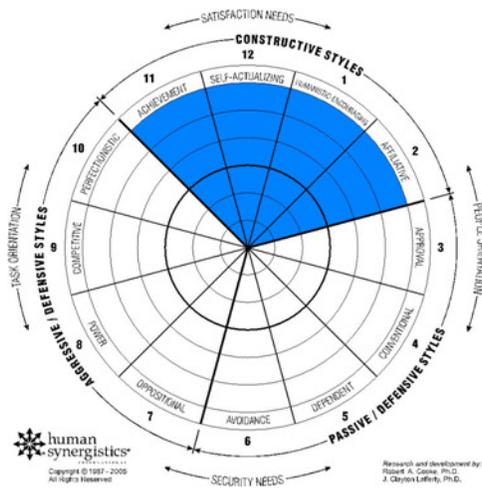
The **Constructive** factor consists of the Achievement, Self-Actualizing, Humanistic-Encouraging, and Affiliative scales. This factor characterizes self-enhancing thinking and behavior that contribute to one's level of satisfaction, ability to develop effective work relationships, and proficiency at accomplishing tasks. The Constructive styles are related to a concern for growth and development and positive strategies for addressing people and tasks. High scores in these areas indicate a well-balanced person who enjoys both tasks and people—someone who is goal-oriented and confident yet patient and cooperative.

**Table 6:
Rotated Factor Structure of ACUMEN WorkStyles Scales¹**

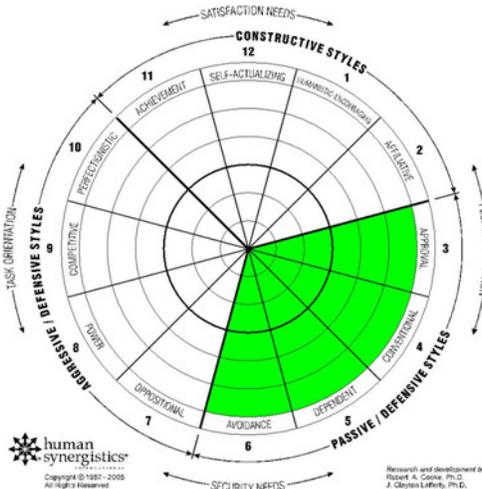
Scale	Communality	Factor 1	Factor 2	Factor 3
Self-Assessment (N = 2,501)				
1. Humanistic-Encouraging	.70	.00	.81	-.22
2. Affiliative	.75	.07	.84	-.22
3. Approval	.66	.73	.17	.31
4. Conventional	.71	.83	-.10	-.07
5. Dependent	.78	.87	-.13	-.01
6. Avoidance	.68	.71	-.31	.28
7. Oppositional	.69	.27	-.37	.69
8. Power	.77	-.09	-.28	.83
9. Competitive	.70	.05	.05	.83
10. Perfectionistic	.59	.19	.33	.67
11. Achievement	.73	-.40	.67	.34
12. Self-Actualizing	.76	-.39	.75	.22
% Variance explained		24.4	23.8	22.9
Description-by-Others Assessment (N = 14,370)				
1. Humanistic-Encouraging	.81	-.02	.84	-.33
2. Affiliative	.84	.05	.81	-.43
3. Approval	.73	.78	.16	.31
4. Conventional	.74	.84	-.17	-.06
5. Dependent	.83	.89	-.19	-.10
6. Avoidance	.69	.67	-.37	.31
7. Oppositional	.79	.18	-.47	.73
8. Power	.85	-.04	-.37	.84
9. Competitive	.80	.06	-.11	.89
10. Perfectionistic	.69	.11	.31	.76
11. Achievement	.80	-.38	.75	.30
12. Self-Actualizing	.83	-.32	.85	.03
% Variance explained		23.9	27.8	26.7
Factor Label		Aggressive/ Defensive	Constructive	Passive/ Defensive

 Principle components factor analysis with varimax rotation.

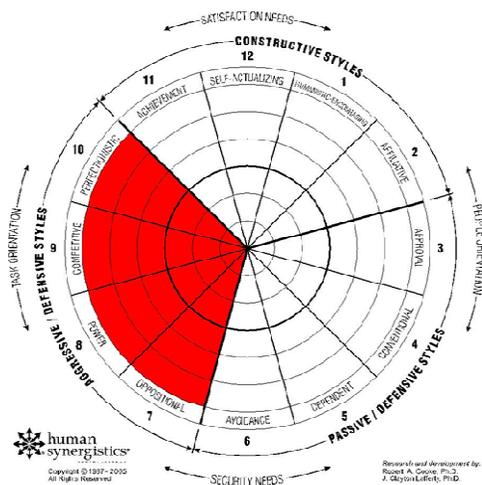
Figure 5:
The Three Factors Underlying ACUMEN WorkStyles Scales



Constructive. The Achievement (11), Self-Actualizing (12), Humanistic-Encouraging (1), and Affiliative (2) scales characterize self-enhancing thinking and behavior that contribute to one’s level of *satisfaction*, ability to develop healthy relationships and work effectively with *people*, and proficiency at accomplishing *tasks*.



Passive/Defensive. The Approval (3), Conventional (4), Dependent (5), and Avoidance (6) scales represent self-protecting thinking and behavior that promote the fulfillment of *security* needs through interaction with *people*.



Aggressive/Defensive. The Oppositional (7), Power (8), Competitive (9), and Perfectionistic (10) scales reflect self-promoting thinking and behavior used to maintain one’s status/position and fulfill *security* needs through *task*-related activities.

6. Reliability

Reliability is an important characteristic of any measuring tool. If items within a scale do not all measure the same thing, then you cannot rely on the overall scale score (the average of the different items); the addition or subtraction of one item might make a huge difference, if one of them measures something different from the others. Also, if respondents describe you in very different ways, you cannot rely on the overall score (the weighted average of scores from the different respondents); your overall score would depend less on your true characteristics and more on whom you chose to describe you.

Across-Item Consistency within a Scale

You might ask, why bother with a scale composed of multiple questions? Why not ask just one direct question? The reasons have to do with levels of abstraction, limitations of language, and the differences between observations and inferences.

People observe numerous instances and examples of specific behaviors from which they infer more abstract impressions about personality, motivations, and skills. The words used to describe the more abstract impressions tend to have somewhat different meanings from one person to the next. For example, when you ask people to articulate the difference between “anxious” and “worried,” they will reach agreement more quickly if they refer to concrete examples of behaviors and situations rather than trying to describe the difference in abstract terms.

The basic idea behind using multiple items is that each item taps into a specific aspect of the more general domain in question, and, if the items are selected well, the sum of the specific aspects begins to describe the full range of the domain. Psychologists have consistently found that for abstract characteristics like “personality” or “mental ability” or various complex “skills,” single-item measures are less useful than multiple-item measures. The key, however, is to use items which tap into different aspects of the same domain. This is the issue of a scale’s internal consistency.

For assessments like *Leadership WorkStyles*, it is critical that all the items in a scale measure the same thing. For this reason, internal consistency analyses were performed on data from a sample of 5,089 individuals rated by themselves and by 59,566 descriptions-by-others.

Human Synergistics assessed across-item consistency using Cronbach's *alpha* coefficient. The results show that all of the scales have an acceptable degree of internal consistency (see **Table 7** and **Figure 6**). The *alpha* coefficients range from 0.77 to 0.86 for the self-assessment scales, and from 0.79 to 0.92 for the description-by-others assessment scales. This demonstrates good scale reliability. The *alpha* coefficients of the *Leadership WorkStyles* scales are comparable to those of their predecessors

in the ACUMEN for Managers Self-Assessment instrument. Note that the scales have different numbers of items, as shown in Table 7. The criteria for adding an item to a scale or deleting an item were based largely upon the item's contribution to internal consistency rather than on a desire to have a specific number of items in a scale.

The size of these internal consistency coefficients—roughly between .80 and .90—tells a useful story. For example, when most people examine the results of the individual items within a scale, they will see a very consistent pattern; few people will see a pattern of high scores on some items but low scores on other items in the same scale. A practical implication of this is that useful development activities can broadly address the general concept embodied by the scale, rather than being tightly focused only on specific behaviors measured by individual items in the scale. This can be the difference between trying to change your attitude versus trying to change a handful of specific ways you express your attitude: Both approaches can be useful, but you do not necessarily get to the former by way of the latter.

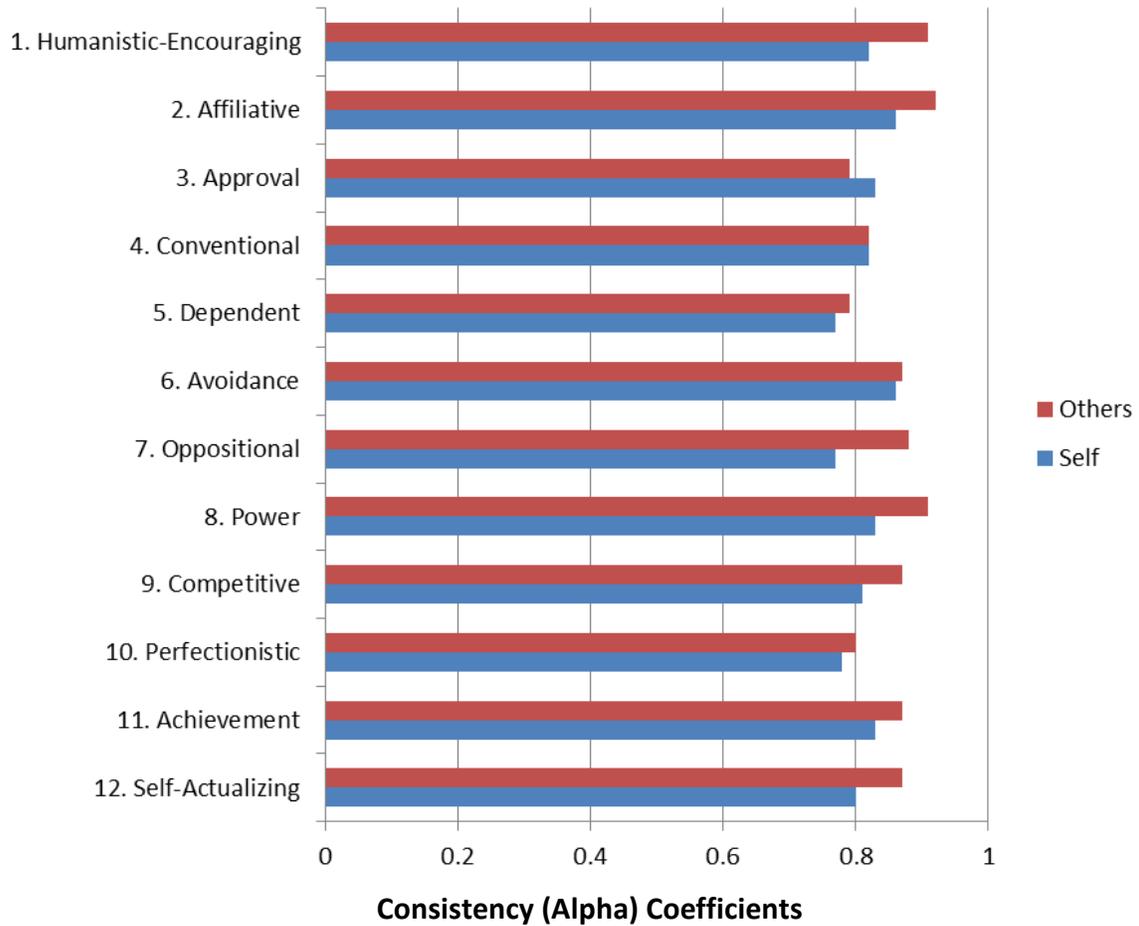
- Larger internal consistency coefficients would suggest the instrument could be shorter (and therefore faster to use) without sacrificing much in the way of instrument reliability. Smaller internal consistency coefficients would suggest the scale is somewhat unclear about what it is measuring, implying that a participant would have more difficulty determining exactly what kind of developmental activities would be best.

**Table 7:
Across-Item Consistency of the Leadership WorkStyles Scales**

Scale	Number of Items	Self-Assessment 	Description-by- Others
		Alpha Coefficient	Assessment  Alpha Coefficient
1. Humanistic-Encouraging	7	.82	.91
2. Affiliative	7	.86	.92
3. Approval	7	.83	.79
4. Conventional	9	.82	.82
5. Dependent	8	.77	.79
6. Avoidance	7	.86	.87
7. Oppositional	8	.77	.88
8. Power	7	.83	.91
9. Competitive	9	.81	.87
10. Perfectionistic	9	.78	.80
11. Achievement	8	.83	.87
12. Self-Actualizing	8	.80	.87
Total number of items	94		

 N = 5,089  N = 59,566

Figure 6.
Across-Item Consistency of the Leadership WorkStyles Scales



Across-Observer Consistency

Feedback from others can be exceptionally valuable precisely because self-perceptions can be grossly inaccurate. For that reason, it is important to know the degree of reliability across respondents. Do others typically share the same perceptions, or does it make a huge difference in the assessment results depending on whom the individual selects to provide feedback?

For this reason, we examined across-observer consistency for description-by-others assessments scale by scale to determine the intraclass correlations (see **Table 8** and **Figure 7**). The results, ranging from 0.58 to 0.77, indicate that different respondents have a moderately high amount of agreement among themselves when describing a target individual. These data are comparable to previous ACUMEN instruments.

- Substantially larger intraclass correlation coefficients (exceeding 0.90) would mean that a multirater instrument was not needed: A single respondent could provide sufficiently accurate information. Substantially smaller coefficients (near 0.20, say) would mean that each respondent has such a different perception that it would not make sense to average them together: The instrument might actually tell us less about the person being described and more about the values and situation of the person providing the feedback.

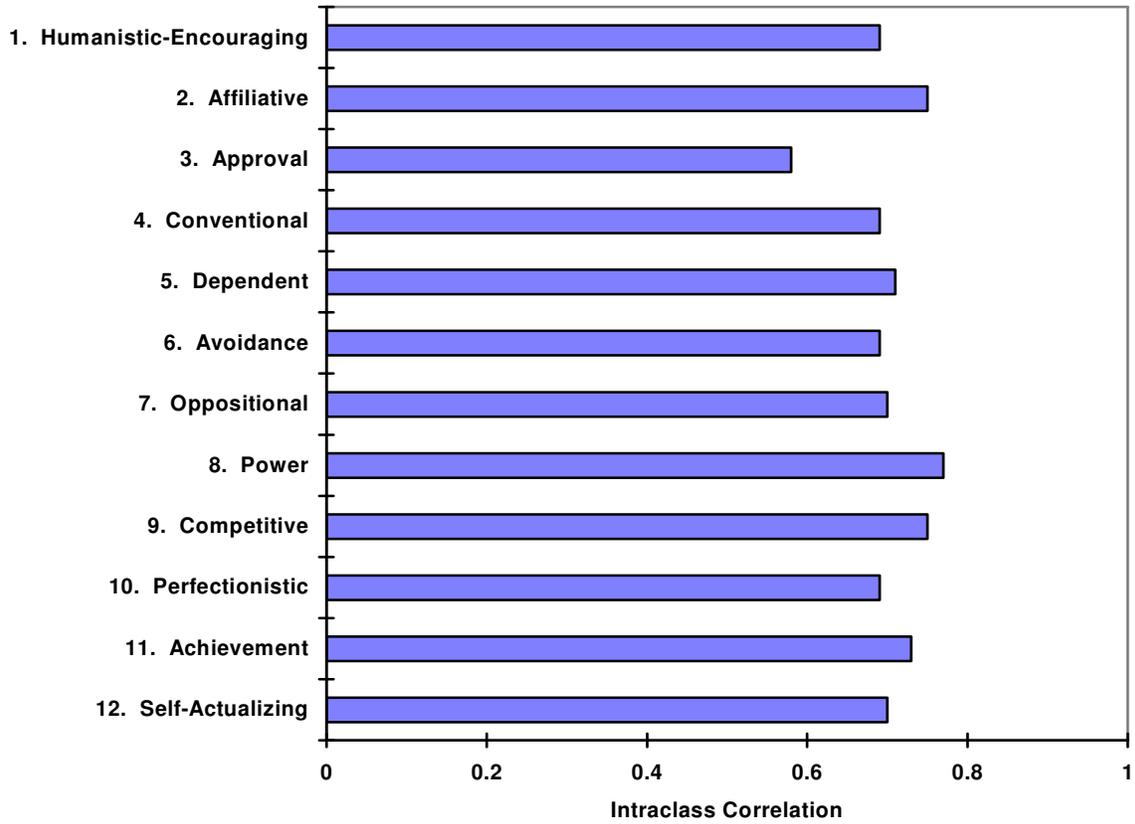
The overall level of agreement among all respondents touches on an interesting question, one that might be reflected in the breakout of feedback from different categories of respondents: Are there systematic differences in responses from bosses, peers, and direct reports? The answer is yes (see **Table 9**). The results shown in Table 9 are from a sample of 464 *WorkStyles* participants who were described by at least one direct report, at least one boss, and at least one peer.

Table 8:
Across-Observer Consistency of the WorkStyles (LWS and TWS) Scales

Scale	Intraclass Correlation [☞]
1. Humanistic-Encouraging	.69
2. Affiliative	.75
3. Approval	.58
4. Conventional	.69
5. Dependent	.71
6. Avoidance	.69
7. Oppositional	.70
8. Power	.77
9. Competitive	.75
10. Perfectionistic	.69
11. Achievement	.73
12. Self-Actualizing	.70

☞ This is the intraclass reliability coefficient R_k for the aggregated scores based on a mean of 5.75 respondents per participant, where there are at least 4 respondents per participant. There were 2,501 participants and 14,370 respondents.

Figure 7.
Across-Observer Consistency of the WorkStyles (LWS and TWS) Scales



**Table 9:
Different Respondent Categories for WorkStyles (LWS and TWS)¹**

	Responses by Direct Reports	Responses by Bosses	Responses by Peers
1. Humanistic-Encouraging	26.67**	25.97	25.69
2. Affiliative	27.23	26.67	26.81
3. Approval	17.57**	18.90	18.48
4. Conventional	20.79	20.70	21.15
5. Dependent	15.92**	17.36	17.20
6. Avoidance	12.60**	14.07	13.65
7. Oppositional	16.16**	16.80	16.96
8. Power	14.49	14.42	14.98
9. Competitive	21.69	21.15	21.87
10. Perfectionistic	25.56	25.65	25.74
11. Achievement	31.36**	30.32	30.24
12. Self-Actualizing	30.00**	28.64	28.64

¹ Based on 464 participants rated by at least one respondent in each of the three respondent categories; these 464 participants were rated by a total of 617 bosses, 1,170 peers, 1,420 direct reports.

* significantly different ($p < .01$) from only one other respondent category

** significantly different ($p < .01$) from both other respondent categories

In general, the responses by bosses and peers tend to be very similar to each other; they do not differ to a statistically significant degree on any of the 12 scales.

Direct reports, however, differ from bosses and peers on about half the scales:

- Direct report responses are significantly **higher** than boss and peer responses on Humanistic-Encouraging, Achievement, and Self-Actualizing, where high scores are desirable.
- Direct report responses are significantly **lower** than boss and peer responses on Approval, Dependent, and Avoidance, where low scores are desirable.
- Direct report responses are significantly **lower** than peer responses on Oppositional, another scale where low scores are desirable. (The difference between direct report responses and boss responses falls just short of being considered statistically significant.)
- As a rule, where there are significant differences, direct reports provide more favorable responses than bosses and peers.

Using data from Table 9, **Figure 8** illustrates the magnitude of these differences. In general, responses by direct reports tend to be relatively near the 50th percentile. Responses by bosses and peers are noticeably higher on the Approval, Avoidance, Dependent, and Oppositional scales, and noticeably lower on the Achievement, Self-Actualizing, and Humanistic-Encouraging scales.

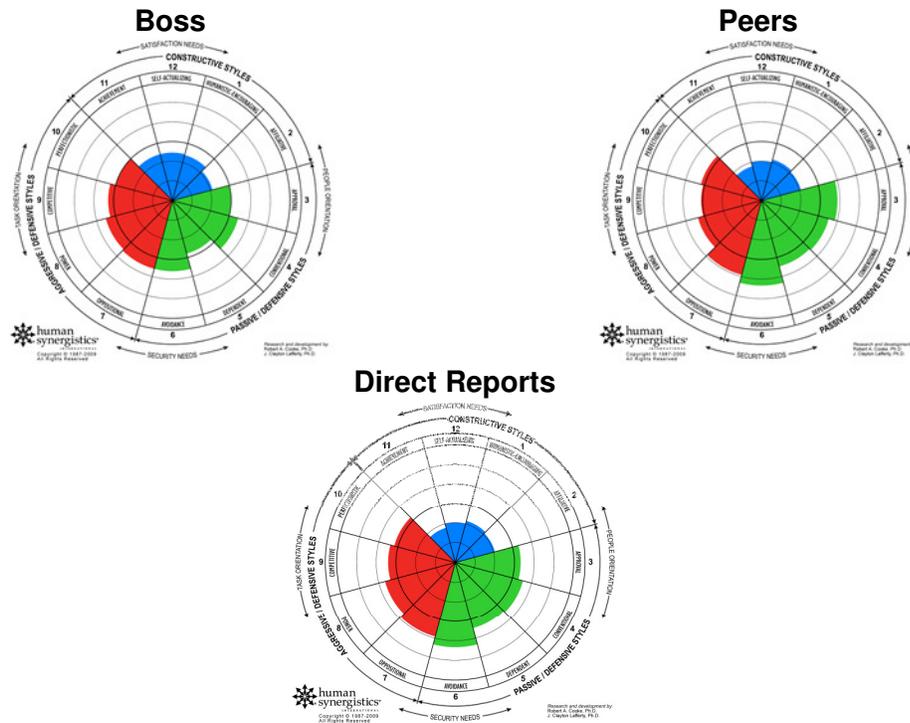
It is important to note that these differences between direct report, boss, and peer responses are statistical averages: The picture is very different for many individual participants.

Overall, these differences between direct report, boss, and peer responses provide an explanation for why the across-observer reliability coefficients are not higher: The respondent's position relative to the person being described influences responses to at least some degree. On the other hand, despite the differences between respondents, there is still a moderately high level of across-observer reliability.

There are some practical implications of these findings about across-observer reliability:

- There is a point of diminishing returns in asking for more respondents. Given the overall amount of agreement, the first few respondents usually provide a very good sense of the overall pattern of the feedback. The 9th or 10th respondent for a participant often will not be adding any new information.
- Because direct reports, bosses, and peers see a participant in somewhat different situations, the participant is well-advised to include respondents from different levels in the organization. When selecting respondents to provide feedback, the best advice is the most obvious: Pick respondents who know the individual well and are appropriately placed to observe his or her activities. (“If you want to know the score, ask people who have been watching the game.”) In contrast, less useful strategies include using an organizational chart to pick respondents, or setting a quota for a certain number of peers and a certain number of direct reports, etc.

Figure 8.
Comparison of WorkStyles (LWS and TWS) from Different Respondent Categories



The WorkStyles Scales

<p>1. Humanistic-Encouraging supportive, motivates others, patient</p> <p>2. Affiliative friendly, warm, trusting</p> <p>3. Approval needs approval from others, forgiving, overly generous</p> <p>4. Conventional conforming, reliable, restrained</p>	<p>5. Dependent a follower, deferential, submissive</p> <p>6. Avoidance apprehensive, self-doubting, tense</p> <p>7. Oppositional questioning, negative, critical</p> <p>8. Power authoritarian, controlling, easily angered</p>	<p>9. Competitive boastful, self-centered, needs to win</p> <p>10. Perfectionistic demanding, results-oriented, driven</p> <p>11. Achievement enjoys challenges, strives for excellence, decisive</p> <p>12. Self-Actualizing enthusiastic, creative, confident</p>
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7. Validity

For the ACUMEN *WorkStyles* instrument, the issue of validity is how well the assessment measures what it is intended to measure. Even a highly "reliable" (consistent) instrument might be measuring something other than what was intended. Thus, validity is the ultimate basis for judging the meaningfulness and usefulness of the inferences that can be made from the scores. Validity information for an instrument has to be, by its very nature, accumulated over a long period of time. Traditionally, the various means of accumulating validity evidence have been grouped into categories called content-related, criterion-related, and construct-related. As is recognized in the *Standards for Educational and Psychological Testing* [[American Educational Research Association](#) (AERA), the [American Psychological Association](#) (APA) and the [National Council on Measurement in Education](#) (NCME), 1999], these groupings are not mutually exclusive and overlap substantially. This is because they do not represent different forms of validity, but merely different ways of providing evidence of validity.

Content-related evidence of validity

Content-related evidence of validity deals with the demonstration that a sample of items or questions is representative of a defined domain of interest. This is also referred to as consensual or face validity and is strongly related to internal consistency. The items in ACUMEN *WorkStyles* sample thinking and behavior styles in a systematic, comprehensive manner. Evidence of the content-related validity of the scales is seen in cluster and factor analyses within and across scales (where distinct behavioral groupings emerge). Each scale has considerable internal consistency and corresponds to an easily recognizable facet of human behavior.

Construct-related evidence of validity

Construct-related evidence of an instrument's validity depends on having a coherent body of theories and constructs on which measurement is based. Validity is demonstrated by the extensiveness of the theoretical basis of the instrument and the accuracy of the predictions made about internal and external characteristics of the measure.

ACUMEN *WorkStyles*, like previous ACUMEN assessment instruments, draws on a large and eclectic theoretical base from the fields of clinical psychology, personality assessment, and organizational behavior. The theoretical foundations of *WorkStyles* are closely related to its factorial structure. The Constructive factor subsumes concepts introduced by Maslow (1954), McClelland (1961), Likert (1967), and Herzberg (1966), as well as concepts more recently endorsed by theorists like Bennis and Nanus (1985), Kotter (1988), Tichy and Devanna (1986), and Waterman (1987). The Passive/Defensive factor subsumes concepts introduced by Horney (1945), Ellis (1962), and Bandura

(1969). The Aggressive/Defensive factor subsumes concepts introduced by McGregor (1960), Stogdill (1963), Blake and Mouton (1964), and the "object relations" psychologists.

High factorial validity and a robust factorial structure have been established by personality theorists (for example, Cattell, 1965, or Eysenck, 1960) as a basis for the description of psychological constructs underlying the given instrument. That is, a robust nomological net (web of relationships) among the elements of an instrument is evidence that the instrument fits into a meaningful, theoretical whole. In this sense, internal validity of the ACUMEN *WorkStyles* scales is supported by factor-analytic studies, which show a three-factor structure (see **Table 6**), characterized by distinct psychological and social-psychological features.

The web of external relationships between ACUMEN *WorkStyles* scales and measures of other constructs also suggests that ACUMEN *WorkStyles* scales are valid. That is, the ACUMEN *WorkStyles* scales seem to fit with a predicted pattern of relationships (and lack of relationships) with other variables. This is seen in the (as predicted) relationships with criteria of effectiveness in the work role, described below under "criterion-related evidence of validity." It is also seen in the general lack of widespread relationships with demographic measures such as race, sex, education, age, tenure, or overall years of job experience.

Criterion-related evidence of validity

Criterion-related evidence of ACUMEN *WorkStyles*' validity refers to the extent to which scores on the ACUMEN *WorkStyles* scales relate to relevant external measures or criteria of performance at work. Because of the possibility of differential validity, the research was conducted separately for leaders/managers versus team members (individual contributors).

Leadership WorkStyles

Leadership WorkStyles, despite changes to some items and the adoption of a five-point scalar, is essentially the same as its predecessor, ACUMEN for Managers. For that reason, research into the validity of ACUMEN is relevant to *WorkStyles*.

In an initial study during the development of ACUMEN Group Feedback (Gratzinger, Warren, & Cooke, 1990), the self-descriptions of effective and ineffective managers were compared using ACUMEN responses of 556 managers and 2,922 respondents. At the same time that respondents used the Group Feedback instrument to provide ACUMEN responses on the focal managers, they also provided responses on the managers' Overall Effectiveness, Interest in Self-Improvement, Ability to Deal with Negative Feedback, and Quality of Interpersonal Relations. These four effectiveness responses, which used seven-point Likert scales with verbal anchors, were factor-analyzed to obtain a weighted-effectiveness score. The 55 managers in the top 10% of the sample on the weighted-effectiveness scales were labeled "effective"; the 54 managers in the bottom 10% were

labeled “ineffective.” The study then compared effective and ineffective managers on the ACUMEN Self-Assessment scales. Effective managers showed a predominance of styles in the Constructive sector of Achievement, Self-Actualizing, Humanistic-Encouraging, and Affiliative scales, which is called a “top-heavy profile.” The ineffective managers showed the opposite, with the lowest scores in the Constructive sector and the highest scores on the Dependent, Avoidance, Oppositional, Power, and Competitive scales. This pattern of scores is called a “bottom-heavy profile.” The results of independent *t*-tests confirmed that seven of the 12 self-assessment scales significantly differentiated effective and ineffective managers.

A second ACUMEN study (Warren & Gratzinger, 1990) examined ACUMEN Self-Assessment's predictive validity for promotion decisions. Based on the Achievement, Self-Actualizing, and Humanistic-Encouraging scores, promotability predictions were made for a sample of 26 line managers. In 82% of the cases, the predictions were consistent with the judgments of an assessment team using interviews and a battery of tests.

In a third ACUMEN study (Warren & Gratzinger, 1990), 108 managers with Oppositional, Approval, and Dependent styles were placed in teams to compete in a simulation (for example, the *Desert Survival Situation*[™] or *Subarctic Survival Situation*[™]) against 102 managers with Achievement, Self-Actualizing, and Humanistic-Encouraging styles. As predicted, the former teams were significantly less likely than the latter to cooperate, pool resources, and perform effectively.

A 1991 ACUMEN study from the financial services industry used a sample of nearly 500 managers with both ACUMEN data and independent measures of job performance. This study examined ACUMEN profile differences between the top 10% and bottom 10% subgroups (in terms of job performance scores) and found that the most effective performers had significantly higher feedback scores on the Humanistic-Encouraging, Affiliative, Perfectionistic, Achievement, and Self-Actualizing scales. The least effective performers had significantly higher feedback scores on the Approval, Conventional, Avoidance, Oppositional, and Competitive scales.

A 1992 study examined the relationship between ACUMEN and PRAXIS[®] for Managers (also known as Leadership Skills), a multirater management competency assessment developed by Acumen International in 1990. In this study, bosses and direct reports evaluated how a manager's style (as measured by ACUMEN) relates to his or her success in management competencies and overall effectiveness (as measured by PRAXIS). The findings of this study also supported earlier ACUMEN validation research on effective management styles. Managers who scored highest across the 16 competencies in PRAXIS also had significantly higher ACUMEN scores on the Achievement, Self-Actualizing, Humanistic-Encouraging, and Affiliative scales. Managers who scored lowest across the 16 PRAXIS competencies had significantly higher ACUMEN scores on the Avoidance, Oppositional, Power, and Competitive scales. The same pattern emerged whether the study used boss responses of effectiveness or direct report responses of effectiveness as the criteria.

Beginning in 1993, the ACUMEN *WorkStyles* description-by-others assessment included nine questions about performance effectiveness. These nine questions are useful as performance measures, to examine the extent to which the *WorkStyles* scales relate to performance. Because the nine rating dimensions are significantly correlated with each other, they were combined to create a single “Overall Average” of performance effectiveness (which has an *alpha* internal consistency coefficient of 0.94.). In some respects, these responses are similar to traditional appraisal responses. Because performance appraisal responses are traditionally completed by an individual's boss, but not by other co-workers, responses by bosses on these performance effectiveness questions (along with the Overall Average) were also analyzed separately. Whereas all 5,089 leadership/managers had been described by at least four respondents, 4,629 (91%) participants had been described by their bosses. The descriptive statistics in **Table 10** indicate that performance feedback from bosses is typically quite similar to performance feedback from all respondents (which include boss responses). Only one performance rating is significantly different between boss raters and all raters: The boss is more likely than other respondents to describe a manager as having a higher level of job-related technical expertise. However, the Overall Average responses are remarkably similar between boss and all other respondents.

Table 11 presents the zero-order correlations between effectiveness feedback and both self-assessment and description-by-others assessment Leadership *WorkStyles* scale scores. In any large sample, a small correlation can be “statistically significant” and yet still be so small as to be trivial. Given the sample size ($n=2,500$), any correlation greater than 0.10 would be statistically significant. However, in Table 11, to focus attention primarily on the more meaningful relationships, the values of the correlations are in a larger, bold font only if they are at least 0.10 in magnitude.

- Note that effectiveness feedback from all respondents was chosen as the criterion, rather than effectiveness feedback only from the boss. There are several practical and theoretical reasons for this:
 1. the feedback report is primarily based on the results from all respondents, not just the boss;
 2. a combined rating from multiple sources (such as all respondents) is more statistically reliable—and therefore psychometrically superior as a criterion—than a rating from any one source (such as boss only);
 3. the average feedback by boss does not differ systematically from the average feedback by all respondents, especially for the Overall Average composite; and
 4. only about half of all leaders/managers had received feedback from their bosses.

**Table 10:
Effectiveness Feedback for Leadership WorkStyles Participants**

Response Anchors

1	2	3	4	5	6	7
Not effective	Well below average	Below average	Average, satisfactory	Above average	Well above average	Extraordinary, absolutely the best

Questions	All Respondents (N = 59,555)		Bosses Only (N = 5,604)	
Indicate how effectively the individual performs in selected areas of leadership responsibility.	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
1 Overall performance in their job?	5.46	.964	5.52	.891
2 Teamwork , ability to work closely with other people?	5.38	1.091	5.43	.983
3 Ability to communicate clearly?	5.34	1.075	5.29	.959
4 Listening skills?	5.21	1.097	5.23	.965
5 Job-related technical expertise ?	5.54	1.041	5.65	.946
6 Creativity ?	5.10	1.034	5.09	.978
7 Effectiveness at solving problems ?	5.36	.995	5.38	.913
8 Skill at resolving disagreements productively?	4.97	1.094	4.91	.999
9 Skill at leading and influencing others?	5.10	1.125	5.02	.997

Note: Key words are printed in bold characters here, but not in the original questions seen by respondents.

**Table 11:
Correlations Between Leadership WorkStyles Scales
and Effectiveness Feedback from All Respondents**

		Effectiveness Feedback by All Respondents								
		Team-work	Commu-nicate	Listen-ing	Exper-tise	Creati-ty	Solving	Resolv-ing	Leading	Overall Average
Self-Assessment										
1.	Humanistic-Encouraging	.29	.21	.28	.04	.12	.12	.28	.21	.23
2.	Affiliative	.31	.14	.19	-.11	.10	.05	.27	.21	.18
3.	Approval	-.05	-.07	-.02	-.06	-.06	-.15	-.05	-.14	-.09
4.	Conventional	-.03	-.15	-.01	-.13	-.24	-.18	-.04	-.18	-.15
5.	Dependent	-.02	-.11	.05	-.07	-.12	-.16	-.05	-.16	-.11
6.	Avoidance	-.14	-.18	-.10	-.02	-.07	-.16	-.17	-.20	-.17
7.	Oppositional	-.20	-.08	-.15	.03	-.03	-.06	-.17	-.12	-.12
8.	Power	-.18	-.04	-.22	.07	.10	.07	-.11	.00	-.04
9.	Competitive	-.10	-.03	-.16	.05	.14	.01	-.07	.03	-.02
10.	Perfectionistic	-.12	-.03	-.06	.08	.08	.04	-.04	-.04	-.01
11.	Achievement	.07	.14	.05	.13	.23	.19	.13	.21	.19
12.	Self-Actualizing	.13	.15	.05	.06	.33	.17	.18	.25	.21
Description-by-Others Assessment										
1.	Humanistic-Encouraging	.75	.56	.71	.29	.41	.51	.64	.61	.69
2.	Affiliative	.79	.53	.66	.15	.37	.44	.62	.60	.65
3.	Approval	-.04	-.09	-.05	-.28	-.14	-.30	-.14	-.22	-.20
4.	Conventional	-.21	-.30	-.15	-.36	-.56	-.49	-.31	-.44	-.45
5.	Dependent	-.14	-.31	-.08	-.37	-.40	-.46	-.30	-.44	-.41
6.	Avoidance	-.44	-.44	-.41	-.26	-.34	-.45	-.45	-.50	-.52
7.	Oppositional	-.58	-.34	-.54	-.08	-.22	-.29	-.49	-.39	-.45
8.	Power	-.53	-.24	-.56	-.02	-.07	-.16	-.39	-.25	-.33
9.	Competitive	-.33	-.12	-.43	-.02	.06	-.10	-.27	-.09	-.19
10.	Perfectionistic	-.24	-.01	-.15	.18	.07	.06	-.12	-.06	-.03
11.	Achievement	.36	.46	.33	.46	.60	.61	.43	.56	.61
12.	Self-Actualizing	.59	.56	.48	.40	.74	.64	.56	.68	.73

Note: N of cases = 2,500; any value of $r > .10$ is statistically significant ($p < .01$)

The most obvious conclusion from **Table 11** is that self-assessments are much less strongly related to effectiveness than feedback from others. Only 18 correlations involving self-assessments reach or exceed 0.20, whereas 80 correlations involving feedback by others reach or exceed 0.20. No correlation involving self-assessments exceeds 0.33, whereas 53 correlations involving others' feedback reach or exceed 0.40 in magnitude. Skeptics may question whether others are really very good judges of true performance, but even those skeptics have to be impressed with the fact that others' perceptions of style are so strongly related to at least their *perceptions* of performance. And for interpersonal phenomena such as leadership or communication, the impact on others is the intended result: If they perceive that you are not leading or communicating very well, then their perceptions *must* be accurate.

- As a side note, we examined the effectiveness feedback from bosses. The boss responses show fundamentally the same pattern of relationships with *WorkStyles* as the effectiveness feedback from all respondents. However, the *WorkStyles* correlations involving boss effectiveness feedback are uniformly weaker (by roughly 0.10 for relationships with *WorkStyles* self-assessments, and roughly 0.20 for relationships with *WorkStyles* others' feedback) than the comparable correlations involving effectiveness feedback from all respondents. This pattern is consistent with the observation that the boss effectiveness feedback is less psychometrically reliable than the effectiveness feedback from all respondents.

Because the self-described style measures are so weakly related to the performance feedback, this strongly implies that feedback from respondents is a critical component of personal development. Many managers are unaware of how others perceive their style, and how their perceived style affects their leadership performance. Respondent feedback dramatically raises the level of awareness.

A second conclusion from the results shown in Table 11 is that all the *WorkStyles* description-by-others assessment scale scores are significantly related to at least one important aspect of effectiveness. In many cases, the magnitude of the correlation is substantial—above .40 and as high as .79. Overall:

- Four scales are positively correlated with effectiveness: Humanistic-Encouraging, Affiliative, Achievement, and Self-Actualizing. People with high scores on these thinking and behavior styles are clearly seen as more effective.
- Eight scales are negatively correlated with effectiveness: Approval, Conventional, Dependent, Avoidance, Oppositional, Power, Competitive, and Perfectionistic. People with high scores on these thinking and behavior styles tend to be seen as less effective.

To illustrate the practical meaning of the relationship between ACUMEN Leadership *WorkStyles* scores and effectiveness feedback, average *WorkStyles* profiles were created for two groups of leaders from a dataset of 5,089 focal leaders (see **Figure 9**). The profiles on the left are the average Leadership *WorkStyles* profiles for those leaders whose overall Constructive feedback-by-others, as

compared to their overall Defensive feedback-by-others, was in the bottom 10% of the sample (n=509). The profiles on the right are the average Leadership *WorkStyles* profiles for those leaders whose overall Constructive feedback-by-others, as compared to their overall Defensive feedback-by-others, was in the top 10% of the sample (n=509).

Apart from performance feedback-by-others, the *WorkStyles* scales are also related to self-reported earnings. The *WorkStyles* self-assessment instrument includes a multiple-choice question asking a participant to indicate the range into which his or her salary falls. Although participants have the option of declining to answer this question, a sample of 2,500 leaders/managers was chosen where 100% provided this salary information. Interestingly, the pattern of relationships between earnings and *WorkStyles* scales is different for self-description styles and description-by-others styles. Again, because large sample sizes can make weak relationships become statistically significant, only correlations above 0.20 were treated as important.

- Earnings are essentially unrelated to self-description scores.
- Higher earnings are associated with higher description-by-others scores on five scales: Humanistic-Encouraging, Affiliative, Achievement, Self-Actualizing, and Perfectionistic.
- Lower earnings are associated with higher description-by-others scores on four scales: Approval, Conventional, Dependent, and Avoidance.
- Earnings are essentially unrelated to higher description-by-others scores on three scales: Oppositional, Power, and Competitive.

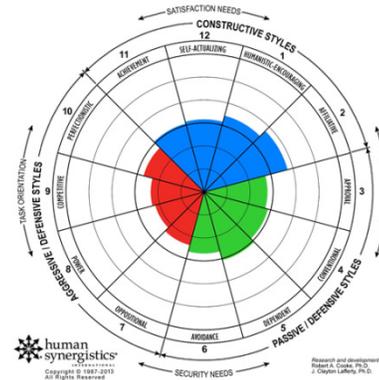
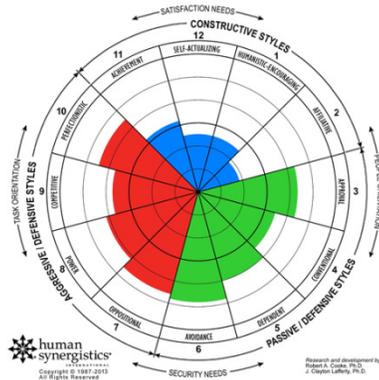
This means when it comes to salary, leaders are likely to earn more if their styles are more proactive, more results-oriented, and characterized by higher scores on Constructive styles and lower scores on Passive/Defensive styles. They are also likely to earn more if they have stronger drives around tasks and competence (higher scores on Achievement and Perfectionistic).

Figure 9.
ACUMEN Leadership WorkStyles Effectiveness Results for Leaders with the
Lowest and Highest Constructive Styles

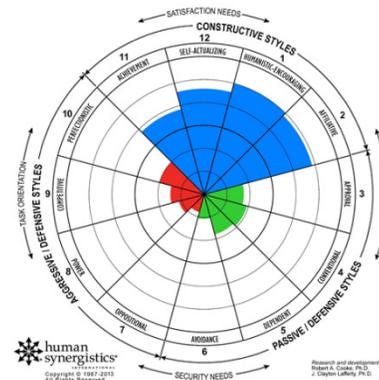
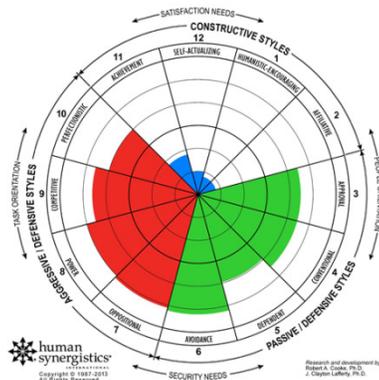
Bottom 10% of sample N=509

Top 10% of sample N=509

Self-Profiles



Others' Profiles

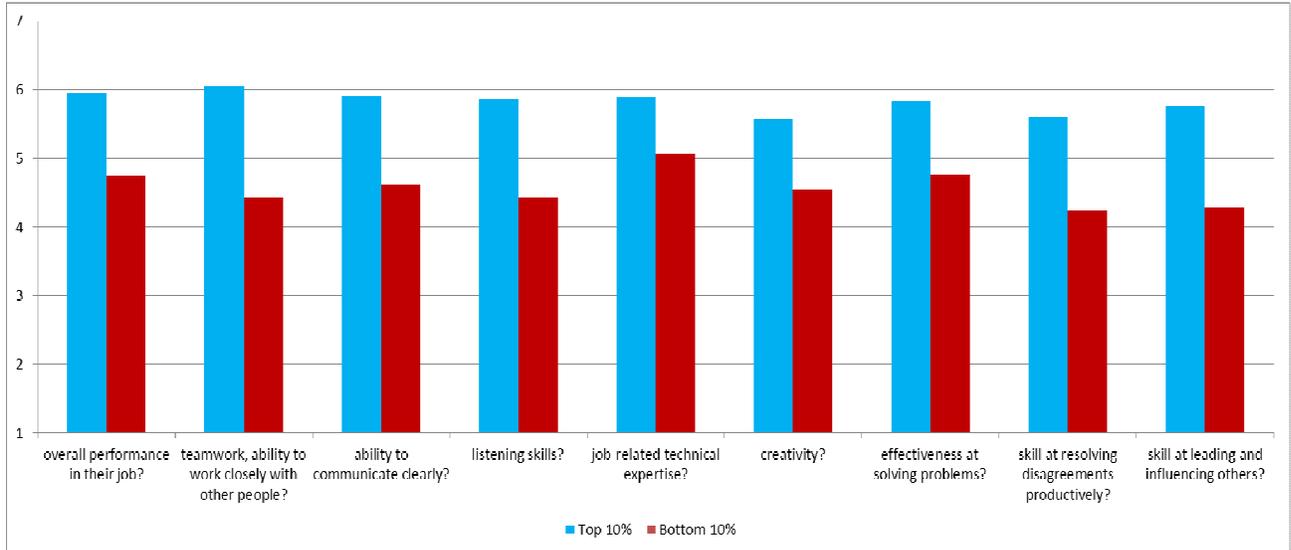


Overall Constructive feedback-by-others was compared to the overall Defensive feedback-by-others. The profiles on the left are based on those leaders whose ratios were in the bottom 10% of the sample. The profiles on the right are based on those leaders whose ratios were in the top 10% of the sample.

The WorkStyles Scales		
1. Humanistic-Encouraging supportive, motivates others, patient	5. Dependent a follower, deferential, submissive	9. Competitive boastful, self-centered, needs to win
2. Affiliative friendly, warm, trusting	6. Avoidance apprehensive, self-doubting, tense	10. Perfectionistic demanding, results-oriented, driven
3. Approval needs approval from others, forgiving, overly generous	7. Oppositional questioning, negative, critical	11. Achievement enjoys challenges, strives for excellence, decisive
4. Conventional conforming, reliable, restrained	8. Power authoritarian, controlling, easily angered	12. Self-Actualizing enthusiastic, creative, confident

Leadership WorkStyles Effectiveness Ratings

Indicate how effectively the individual performs in selected areas of leadership responsibility.



Note: All differences are statistically different at $p < .01$.

The *WorkStyles* self-assessment instrument also includes a multiple-choice demographic question asking about a participant's level of stress. As expected, the participants' stress levels are related to their thinking styles.

- Stress is primarily associated with higher self- and others' feedback on Avoidance. The relationship is stronger with self-descriptions of Avoidance ($r = 0.27$) than with others' feedback of Avoidance ($r = 0.19$).
- Although stress is statistically significantly related to several other *WorkStyles* scales, the magnitude of the correlations is relatively slight (between 0.13 and 0.16) and the pattern is not the same for self-assessments and feedback-by-others. The only common element is that lower stress is associated with higher scores on Humanistic-Encouraging ($r = -0.08$ with self-assessments, $r = -0.09$ with feedback-by-others).

In contrast, the Leadership *WorkStyles* scores are generally not meaningfully related to demographic variables. There are a handful of exceptions to this general statement. Here, again, large sample sizes can make weak relationships become statistically significant, differences may not occur with smaller samples:

- **Race/ethnicity:** In both self-assessments and others' assessments, none of the *WorkStyles* scales differ meaningfully between the ethnicity categories.
- **Sex:** There is one meaningful sex difference: males have higher Competitive scores than females, in both self-ratings and others' ratings.
- **Age:** There are no meaningful differences associated with age. However, the trend seems to be that the youngest groups tend to have more of a task-orientation and the older groups tend to have more of a people-orientation.
- **Job tenure:** The number of years in the current job has no significant relationship to any of the *WorkStyles* scores. However, the trend seems to be that the newer managers tend to have more Passive/Defensive leanings and the older groups tend to have more of a people-orientation.
- **Education:** Level of education is not strongly related to either self-assessed or other-assessed *WorkStyles* scores.

The one meaningfully large relationship (between sex and Competitive) is the exception: in general, *WorkStyles* scores are not strongly or widely related to demographic variables.

Team WorkStyles

Apart from the presumed validity inherited from the ACUMEN instrument, the primary empirical evidence of ACUMEN Team WorkStyles (TWS) comes from studies conducted using effectiveness feedback collected at the same time that others completed the WorkStyles assessment. These are the same nine effectiveness questions that have been collected since 1993 in conjunction with Leadership WorkStyles assessments. In addition to analyzing these nine questions separately, we combined them into a single “Overall Average” rating of effectiveness. Because feedback on performance is more typically completed only by an individual’s boss (and not other co-workers), we also separately examined the feedback by boss on these effectiveness questions. All 2,057 participants in the Team WorkStyles norm sample were described by at least four respondents, but only about half of them (1,170) received feedback from their bosses.

The descriptive statistics for these effectiveness questions, shown in **Table 12**, suggest that for non-supervisory team members (as opposed to managers), bosses tend to give lower effectiveness feedback than do others (who are predominantly peers). The greatest difference is effectiveness at leading and influencing others, where the typical boss feedback is only 4.33 while the typical others’ feedback (with the boss included) is 4.57. Translating this difference on “leading and influencing others” into percentiles compared to all feedback from others, the typical response *by a co-worker* is at the 50th percentile, but the typical response *by a boss* is at the 39th percentile.

A comparison to **Table 10** confirms what you might expect: Effectiveness feedback is higher for leaders/managers than for team members. And predictably, the greatest difference between those two populations is the effectiveness at leading and influencing others, where the average feedback from others is 4.88 for leader/managers but only 4.57 for team members. Again, to translate this difference between the two populations into percentiles, if the typical *team member* is described at the 50th percentile on “leading and influencing others”, then the typical *leader/manager* is described at the 68th percentile.

As performance criteria, the effectiveness feedback from all others (including bosses) is preferable because they are more statistically reliable than the feedback by boss alone, and they are available for the entire Team WorkStyles sample.

**Table 12:
Effectiveness Feedback for Team WorkStyles Participants**

Response Anchors

1	2	3	4	5	6	7
Not effective	Well below average	Below average	Average, satisfactory	Above average	Well above average	Extraordinary, absolutely the best

Questions	All Respondents (N = 2,057)		Bosses Only (N = 1,170)	
	Mean	SD	Mean	SD
Indicate how effectively the individual performs in selected areas of responsibility.				
1. Overall performance in their job?	5.13	0.68	5.06	0.97
2. Teamwork , ability to work closely with other people?	5.06	0.73	4.95	1.09
3. Ability to communicate clearly?	4.98	0.69	4.83	0.96
4. Listening skills?	4.95	0.65	4.79	0.93
5. Job-related technical expertise ?	5.19	0.74	5.12	1.02
6. Creativity ?	4.83	0.66	4.68	0.95
7. Effectiveness at solving problems ?	5.00	0.66	4.86	0.94
8. Skill at resolving disagreements productively?	4.58	0.66	4.39	0.91
9. Skill at leading and influencing others?	4.57	0.75	4.33	1.00
Overall Average	4.92	0.57	4.78	0.75

Note: Key words are printed in bold characters here, but not in the original questions seen by respondents.

The Team WorkStyles scales are significantly related to these effectiveness questions, but much more strongly for the feedback from others than for the self-descriptions (see **Table 13**). In a sample of more than 2,000 participants, a very small correlation (as small as 0.06) can be “statistically significant”, but such a weak relationship—although statistically detectable—would be trivial and lack practical importance. Therefore, to highlight only the larger, more meaningful relationships, the values of correlations are in a larger, bold font if they are at least 0.20 in magnitude.

- Others’ feedback on Team WorkStyles is much more strongly related to effectiveness compared to self-descriptions. Only seven correlations involving self-descriptions of style reach or exceed 0.20 in magnitude, but 34 correlations involving others’ feedback of style reach or exceed 0.50 (either positive or negative). The largest correlations involving self-descriptions range between 0.20 and 0.24, whereas the comparable correlations involving others’ feedback are as high as 0.78!
- Four scales—Humanistic-Encouraging, Affiliative, Achievement, and Self-Actualizing—are strongly positively related to effectiveness. Team members with higher levels of these style orientations are seen as more effective. This is exactly the same pattern found in the Leadership WorkStyles research.
- Seven scales—Approval, Conventional, Dependent, Avoidance, Oppositional, Power, and Competitive—are negatively related to effectiveness, albeit to different degrees. This too is generally similar to the pattern found in the Leadership WorkStyles research. Team members with high scores on these thinking and behavior styles tend to be seen as less effective.
- One scale—Perfectionistic—is positively related to effectiveness, but only weakly. Team members with higher levels of Perfectionistic are described as being slightly more effective overall, primarily due to the task-related (as opposed to team-related) aspects of technical expertise, creativity, and problem solving. This is slightly different from the dynamic for leaders/managers, where an extremely high level of Perfectionistic contributes to task-related effectiveness *but also interferes with teamwork*.

Table 13:
Correlations Between Team WorkStyles Scales
and Effectiveness Feedback from All Respondents

		Effectiveness Feedback by All Respondents									
		Overall	Team-work	Commu-nicate	Listen-ing	Exper-tise	Creati-ty	Solving	Resolv-ing	Leading	Overall Average
Self-Assessment											
1.	Humanistic-Encouraging	0.09	0.21	0.14	0.16	0.03	0.07	0.06	0.17	0.13	0.14
2.	Affiliative	0.06	0.24	0.12	0.15	-0.10	0.04	0.00	0.16	0.11	0.10
3.	Approval	-0.03	0.02	-0.01	0.02	-0.07	-0.01	-0.04	-0.03	-0.08	-0.03
4.	Conventional	-0.15	-0.01	-0.15	-0.01	-0.15	-0.23	-0.15	-0.09	-0.20	-0.15
5.	Dependent	-0.16	-0.03	-0.14	0.00	-0.13	-0.15	-0.15	-0.09	-0.22	-0.14
6.	Avoidance	-0.08	-0.07	-0.08	0.01	-0.06	-0.08	-0.08	-0.07	-0.14	-0.09
7.	Oppositional	-0.04	-0.14	-0.03	-0.09	0.02	0.03	-0.01	-0.12	-0.06	-0.06
8.	Power	0.03	-0.16	0.01	-0.13	0.08	0.12	0.08	-0.07	0.06	0.00
9.	Competitive	0.03	-0.05	0.03	-0.06	0.05	0.12	0.08	0.00	0.08	0.04
10.	Perfectionistic	0.05	-0.04	0.00	-0.02	0.04	0.08	0.04	-0.04	0.00	0.01
11.	Achievement	0.19	0.08	0.13	0.04	0.12	0.20	0.17	0.09	0.18	0.16
12.	Self-Actualizing	0.13	0.12	0.13	0.04	0.04	0.24	0.11	0.10	0.16	0.14
Description-by-Others Assessment											
1.	Humanistic-Encouraging	0.55	0.76	0.59	0.67	0.39	0.44	0.50	0.63	0.57	0.69
2.	Affiliative	0.46	0.78	0.54	0.64	0.22	0.35	0.36	0.59	0.47	0.59
3.	Approval	-0.22	-0.05	-0.18	-0.13	-0.26	-0.15	-0.26	-0.18	-0.25	-0.23
4.	Conventional	-0.39	-0.13	-0.34	-0.15	-0.37	-0.48	-0.43	-0.22	-0.42	-0.39
5.	Dependent	-0.41	-0.14	-0.38	-0.15	-0.40	-0.40	-0.45	-0.25	-0.50	-0.41
6.	Avoidance	-0.46	-0.43	-0.48	-0.38	-0.36	-0.36	-0.45	-0.42	-0.51	-0.52
7.	Oppositional	-0.32	-0.61	-0.36	-0.53	-0.14	-0.20	-0.27	-0.49	-0.31	-0.43
8.	Power	-0.16	-0.52	-0.21	-0.46	-0.03	-0.05	-0.09	-0.34	-0.11	-0.26
9.	Competitive	-0.09	-0.36	-0.10	-0.35	-0.02	0.06	-0.03	-0.23	-0.01	-0.15
10.	Perfectionistic	0.23	-0.09	0.10	-0.03	0.25	0.22	0.24	-0.03	0.12	0.13
11.	Achievement	0.68	0.45	0.54	0.43	0.56	0.60	0.66	0.46	0.61	0.67
12.	Self-Actualizing	0.67	0.65	0.65	0.56	0.46	0.71	0.63	0.58	0.68	0.75

Note: N of cases = 2,057; all values of r > .05 are statistically significant (p < .01)

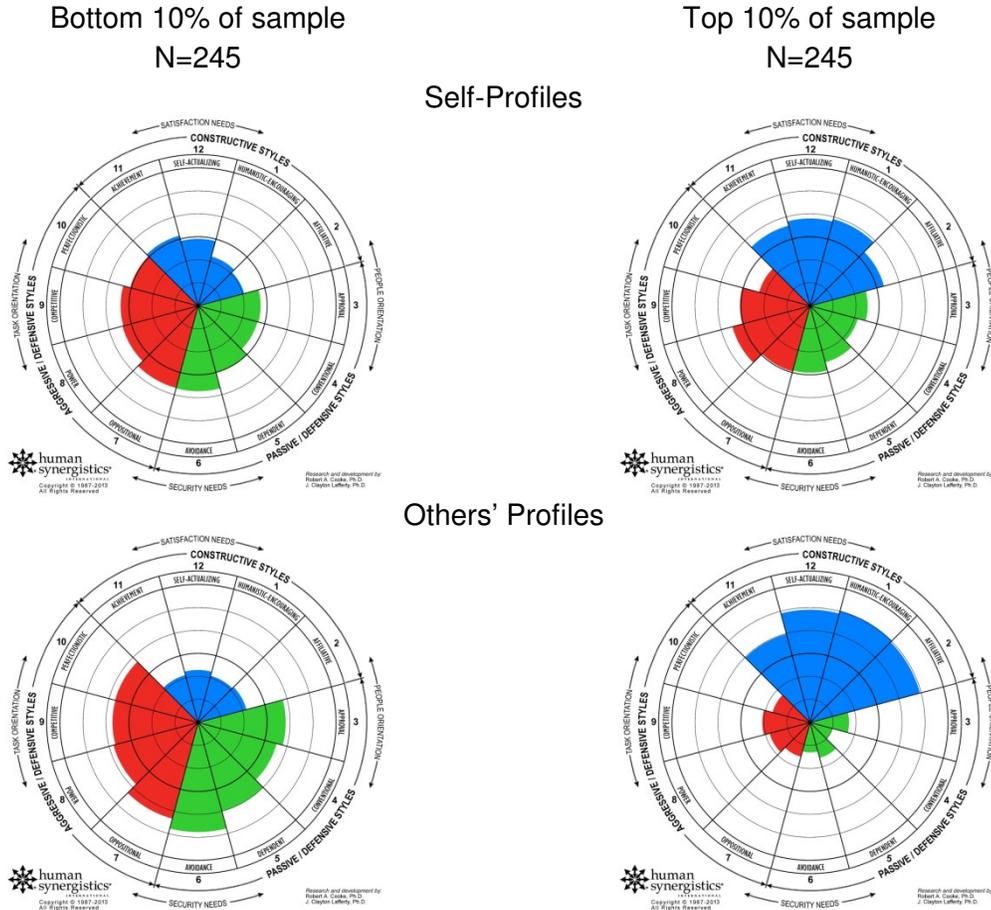
Correlation coefficients are quite abstract. To help communicate the magnitude of the relationships between ACUMEN Team *WorkStyles* and effectiveness, average *WorkStyles* profiles were created for two groups of team members. The profiles on the left are the average Team *WorkStyles* profiles for those individuals whose overall Constructive feedback-by-others, as compared to their overall Defensive feedback-by-others, was in the bottom 10% of the sample. The profiles on the right are the average Team *WorkStyles* profiles for those individuals whose overall Constructive feedback-by-others, as compared to their overall Defensive feedback-by-others, was in the top 10% of the sample. **Figure 10** shows the average profiles for these two groups, including both self-assessment and feedback from others. Although there are differences between the two groups in the self-profiles, the differences are far greater in the feedback-by-others profiles.

As with Leadership *WorkStyles*, the Team *WorkStyles* ratings are related to participants' self-reported earnings. The *WorkStyles* self-assessment asks participants to indicate the range into which their salaries fall. Of the 245 participants in the Team *WorkStyles* sample, 244 provided salary information. Again, because large sample sizes distort the importance of weak but "statistically significant" correlations, only correlations of at least 0.20 were treated as meaningful:

- For both self-assessment and descriptions-by-others, higher earnings are primarily associated with task-oriented styles: Achievement, Self-Actualizing, Competitive, and Power.
- On the other hand, for both self-assessment and descriptions-by-others, lower earnings are primarily associated with Passive/Defensive styles: Dependent, Conventional, and Avoidance.
- For both self-assessment and descriptions-by-others, there seems to be no direct relationship between Team *WorkStyles* and the Humanistic-Encouraging, Affiliative, and Perfectionistic styles.
- Lower earnings are primarily associated with higher descriptions-by-other scores on Approval. Earnings are not associated with self-assessments on Approval.

This means that when it comes to salary, team members and individual contributors are likely to earn more if they are more proactive and results-oriented (high Achievement-orientation) rather than passively accepting the status quo (high Passive/Defensive orientation).

Figure 10.
ACUMEN Team WorkStyles Effectiveness Results for Team Members with the
Lowest and Highest Constructive Styles

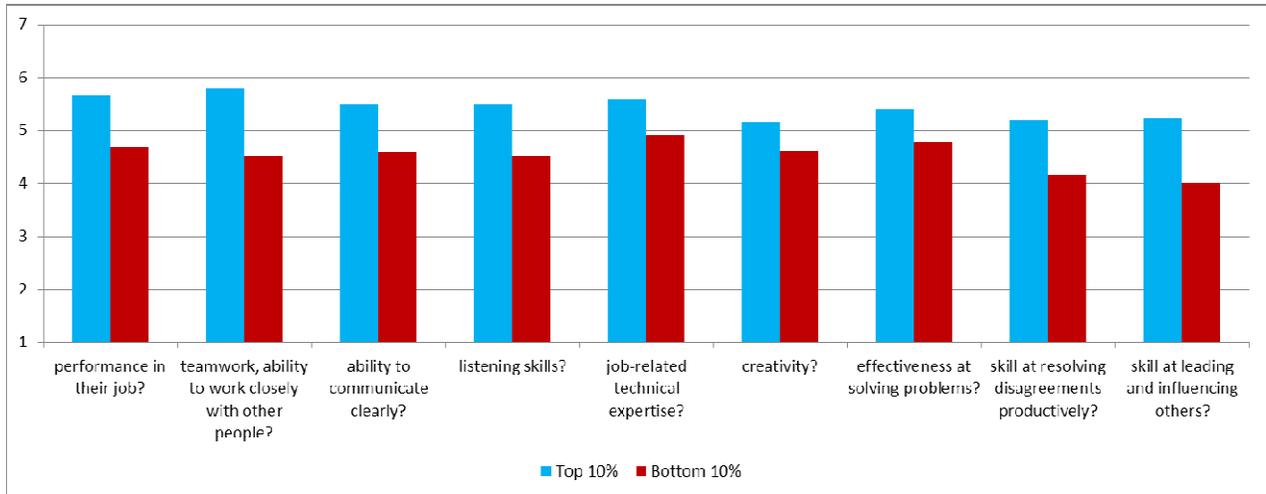


Overall Constructive feedback-by-others was compared to the overall Defensive feedback-by-others. The profiles on the left are based on those team members whose ratios were in the bottom 10% of the sample. The profiles on the right are based on those team members whose ratios were in the top 10% of the sample.

The WorkStyles Scales		
<p>1. Humanistic-Encouraging supportive, motivates others, patient</p>	<p>5. Dependent a follower, deferential, submissive</p>	<p>9. Competitive boastful, self-centered, needs to win</p>
<p>2. Affiliative friendly, warm, trusting</p>	<p>6. Avoidance apprehensive, self-doubting, tense</p>	<p>10. Perfectionistic demanding, results-oriented, driven</p>
<p>3. Approval needs approval from others, forgiving, overly generous</p>	<p>7. Oppositional questioning, negative, critical</p>	<p>11. Achievement enjoys challenges, strives for excellence, decisive</p>
<p>4. Conventional conforming, reliable, restrained</p>	<p>8. Power authoritarian, controlling, easily angered</p>	<p>12. Self-Actualizing enthusiastic, creative, confident</p>

Team WorkStyles Effectiveness Ratings

Indicate how effectively the individual performs in selected areas of responsibility.



Note: All differences are statistically different at $p < .01$.

WorkStyles scores are also related to self-reported stress in non-supervisory team members, although not as strongly as for leaders. The Team *WorkStyles* assessment includes a multiple-choice question asking about the participant's stress level. This information was available for 2,052 of the 2,057 participants in the Team *WorkStyles* sample.

- Stress is primarily associated with higher self-descriptions on Avoidance ($r = 0.21$). Feedback-by-others on Avoidance are associated with the participants' self-reported stress, but not as strongly ($r = 0.12$).
- As might be expected, the overall level of stress in the Team sample was significantly less than in the Leadership sample.

This confirms the obvious: people who describe themselves as anxious and self-doubting also experience more stress.

Although Team *WorkStyles* is related to effectiveness feedback, earnings, and stress, it does not show a general pattern of meaningful relationships with demographic measures. However, there are a handful of exceptions (only correlations at least as large as 0.20 were treated as meaningful):

- **Race/Ethnicity:** Race and ethnicity do not make much difference in Team *WorkStyles* feedback. There are no substantial differences.
- **Sex:** Males have higher scores on Competitive, especially in self-descriptions ($r = +0.21$) but also in feedback from others' ($r = +0.17$).
- **Age:** There is a tendency for older people to give lower Competitive self-descriptions ($r = -0.21$). There are no substantial relationships between others' feedback and individuals' age.
- **Job Tenure:** The length of time individuals have worked in their current jobs is not meaningfully related to their *WorkStyles* scores, either in self-descriptions or others' feedback.
- **Education:** None of the scores on *WorkStyles* are substantially related to level of education.

In short, there are few meaningful correlations between demographic variables and *WorkStyles*, and none of the correlations exceed 0.21. Though there are some differences on *WorkStyles* between major demographic groups, these differences are very small in magnitude, and are not meaningfully large, widespread, or systematic. The few meaningful significant relationships are the exception: in general, *WorkStyles* scores are not strongly or broadly related to demographic variables.

8. WorkStyles Individual Reports

Results of the self-assessment and description-by-others are presented to the participant in an individual report. To receive a **Self-Report** for either LWS or TWS, a participant needs to complete a self-assessment. To receive an **LWS Feedback Report**, the participant needs to complete a self-assessment *and* be described by *at least* three respondents (this reduction from four to three respondents is possible based on our 2013 LWS enhancement release). A **TWS Feedback Report** still requires a completed self-assessment and description-by-others from *at least* four respondents.

The individual reports present results as a combination of narrative text and graphics. The graphic profiles display the scale scores in a circumplex, as described below. For the most part, the narrative reports describe how the scale scores work together, using a “*combination of styles*” concept. The styles combination concept is based on the recognition that, while each of us is unique in many ways, we are very similar to others who share the same thinking and behavior patterns. When a group of people have common patterns, they tend to think and behave in recognizably similar ways, and it makes sense to describe their behavior as “typical” for that combination of thinking and behavior styles.

ACUMEN WorkStyles identified 31 style combinations by examining the pattern of scores among the 12 scales. The style combinations are based on identifying primary and secondary clusters from a total of six clusters (scale combinations of 1-2, 3-4-5, 6, 7-8, 9-10, and 11-12). These clusters were derived from the initial data analysis for ACUMEN Insight for Managers (see **Table 14**).

Table 14:
ACUMEN WorkStyles Cluster Structure for Report Narrative Text

CLUSTER	SCALES	CONTENT
1	1-2	Sociability
2	3-4-5	Acceptance/Conformity
3	6	Avoidance/Apprehension
4	7-8	Dogmatic/Authoritarian
5	9-10	Competitive/Perfectionistic
6	11-12	Achieving/Confident

For style combinations with high 11-12 and 1-2 clusters, tertiary clusters are used to obtain additional information used in triad style combinations. Cluster scores are formed by averaging the percentile scores within each cluster. The primary and secondary clusters are usually the two clusters with the highest and second-highest average percentile scores. The report generator determines and assigns the style combinations based on the expertise of the ACUMEN *WorkStyles* creators, while handling numerous rules, exceptions, and special cases that arise in profile identification. In any case, the assigned style combination leads to one of 31 main style combinations (and eight triad style combinations) of reports, where each report describes an overall thinking style dominated for the most part by two clusters.

The individual **Self-Report** includes several sections, some of which are optional and some of which are only available for **Feedback Reports**, which include both self- *and* others' feedback (see **Table 15**).

The structure of the reports is the same for both **Team WorkStyles** and **Leadership WorkStyles**. The style combination system is also the same. What differs is the choice of topics discussed:

- **Team WorkStyles** addresses four topic areas: Accomplishing Tasks, Working with Others, Communicating, and Working with Differences of Opinion. The report describes the impact and implications of a team member's thinking and behavior styles in the context of an individual working as part of a team, with neither more nor less formal authority than any other team member.
- **Leadership WorkStyles** addresses the same four topics and adds fresh subject matter related to project leadership, team leadership, and managing others. The report discusses the impact of a leader's thinking and behavior styles from the perspective of an individual who is in a management and leadership role, expected to accomplish business results by way of organizing, coaching, motivating, and leading other people.

As an example, consider an individual whose predominant style includes the 7-8 cluster (dogmatic/authoritarian). The **Team WorkStyles** report discusses how to be more flexible in addressing the concerns of fellow team members and how to deal with issues without escalating different perspectives into conflict. The **Leadership WorkStyles** report discusses the same concept of flexibility and also goes on to discuss issues related to empowering a team.

Table 15:
Sections of an ACUMEN WorkStyles Individual Report

Report Section	Self	Feedback
Introduction	✓	✓
Graphic Profile	✓	✓
Self-Perceptions: Summary	✓	✓
Others' Perceptions: Summary		✓
Self vs. Feedback Profiles		✓
Spread of Opinion		optional
Breakout of Ratings from Different Sources		optional
Self-Perceptions: A Closer Look	✓	
Others' Perceptions: A Closer Look		✓
Suggestions for Development	✓	✓
Comments from Respondents		optional

Key

- ✓ Automatically printed as part of report
- optional Automatically printed as part of report, but can be excluded upon request

Descriptions of Report Sections

Introduction

The **Introduction** is the same for every Individual Report; it explains the purpose of the report and how to get the most out of the feedback provided in the report.

Graphic Profile

The **Graphic Profile** shows an individual's scores as shaded areas in a circumplex (see **Figure 11**). Preceding the Graphic Profile is a page that explains how to read the results in the circumplex.

The elements of a circumplex include six concentric circles, 12 segments, and shaded scale score areas.

- The concentric circles represent the 10th, 25th, 50th, 75th, 90th, and 99th percentile points, where the 99th percentile is the outermost edge of the profile.
- The 12 wedge-shaped segments correspond to the 12 scales. Because the segments of the circumplex are labeled with numbers like a clock face, the scales are often referenced by their "clock names," as a mnemonic. For example, the Humanistic-Encouraging scale is called the "1 o'clock" scale.
- The score on any scale is shown by extending a shaded area out from the center of the circumplex. The longer the extension, the higher the percentile score. The percentile score is calculated by converting the raw score on the scale to a percentile score in relation to the norms established in the appropriate standardization sample (either managers or individual contributors). So, for example, the 1 o'clock Humanistic-Encouraging scale in **Figure 11** shows a percentile score of about 85, meaning that the score for this person is higher than 85 percent of the people in the norm sample.

The graphic profiles visually display which scales dominate the individual's thinking and behavioral styles. The report generator creates separate profiles from self-descriptions and others' feedback using different norms.

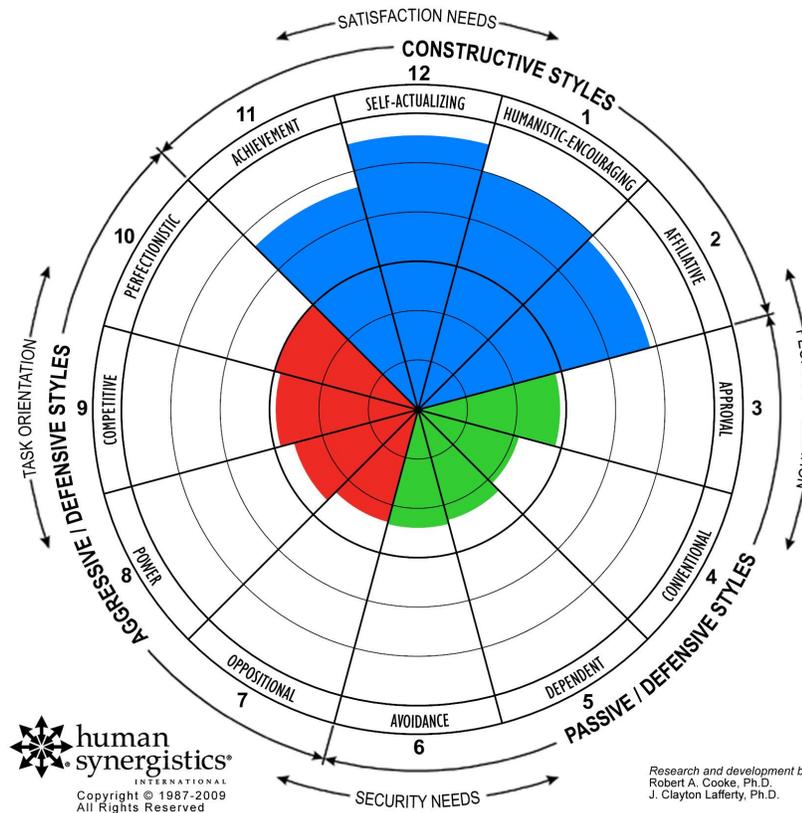
For **Self-Profiles**, the process of creating percentile scores is straightforward. The individual's self-descriptions on the items within a scale are added together to create a raw score. This scale score is compared to the distribution of raw scores for that self-assessment scale for the people in the appropriate norm sample. If the score is equal to or higher than exactly 85% of the scores in the norm sample, then the score is in the 85th percentile for that scale.

For **Description-by-Others Profiles**, the process of creating percentile scores is more complex. The report generator adds together each respondent's feedback on the items within a scale to create a raw scale score from that respondent. These raw scale scores from respondents are then averaged using an algorithm which gives less weight to scores that are farther from the mean of the remaining scores. In effect, the report generator partially (but not totally) discounts responses that are substantially different from the consensus of opinion.

- For example, assume that five respondents had described a person using "4," but a sixth respondent described the same person using "1." The arithmetic average would be 3.5 (the sum of all six responses divided by the number of respondents, which would be 21 divided by 6). However, that sixth respondent gave a very different rating from everyone else—literally one way to define "unreliable." (The less scientific term is "outlier.") The *WorkStyles* scoring algorithm places less weight on outlier responses, and so the weighted average would be 3.7. The outlier rating is given some weight (so the average is not 4.0), but not as much as responses that are closer to the consensus rating.

Once the report generator calculates a weighted average raw scale score from respondents, it converts this score to a percentile by comparing it to the distribution of similar respondent average raw scale scores for the people in the appropriate norm sample.

Figure 11.
Example of ACUMEN WorkStyles Graphic Profile



The WorkStyles Scales

1. Humanistic-Encouraging

supportive, motivates others, patient

2. Affiliative

friendly, warm, trusting

3. Approval

needs approval from others, forgiving, overly generous

4. Conventional

conforming, reliable, restrained

5. Dependent

a follower, deferential, submissive

6. Avoidance

apprehensive, self-doubting, tense

7. Oppositional

questioning, negative, critical

8. Power

authoritarian, controlling, easily angered

9. Competitive

boastful, self-centered, needs to win

10. Perfectionistic

demanding, results-oriented, driven

11. Achievement

enjoys challenges, strives for excellence, decisive

12. Self-Actualizing

enthusiastic, creative, confident

Self-Perceptions: Summary

The **Self-Perceptions: Summary** section provides a one- or two-page narrative overview of the predominant thinking and behavior styles evident in the individual's self-description. In a few short paragraphs, the narrative outlines the predominant styles and how they are likely to come into play in accomplishing tasks and engaging in teamwork. The report narrative is based on the dominant style combination identified in the individual's profile; it summarizes the key assets and possible areas of concern for individuals with that combination of thinking and behavior styles. The **Leadership WorkStyles** version differs from the **Team WorkStyles** in its emphasis on the implications for management and leadership.

Others' Perceptions: Summary

The **Others' Perceptions: Summary** section is analogous to Self-Perceptions: Summary, except that it describes the individual's thinking and behavior styles as rated by respondents. The others' summary is a one- or two-page narrative that outlines the predominant thinking and behavior styles evident in the descriptions-by-others, summarizing key assets and possible liabilities for either team members or leaders with that combination of thinking and behavior styles. Similar to Self-Perceptions: Summary, the **Leadership WorkStyles** version differs from the **Team WorkStyles** version by outlining implications for a management and leadership role.

Self- vs. Description-by-Others Profiles

The Self- vs. Description-by-Others Profiles section presents the individual's self-profile along with his or her description-by-others profile to facilitate a comparison.

Spread of Opinion

The **Spread of Opinion** among the different respondents describing the same leader is shown for each style by a special profile with shading (see **Figure 12**). The spread or amount of disagreement among the respondents is depicted in the profile as follows:

- styles with dark shading are those along which the spread of opinion is narrow (the respondents describing the leader agree);
- styles with light shading are those along which the spread is wide (the respondents disagree); and
- styles with moderate shading are those along which there is neither strong agreement nor disagreement among respondents.

More technically, the shading depicts the amount of variation—that is, the statistical standard deviation—in respondents’ descriptions along each style. Thus, while the length of the extensions reflects the relative extent to which the styles characterize the leader, the shading reflects the extent to which the respondents’ descriptions vary compared to the variance in the descriptions of the 4,500 people in the norming sample.

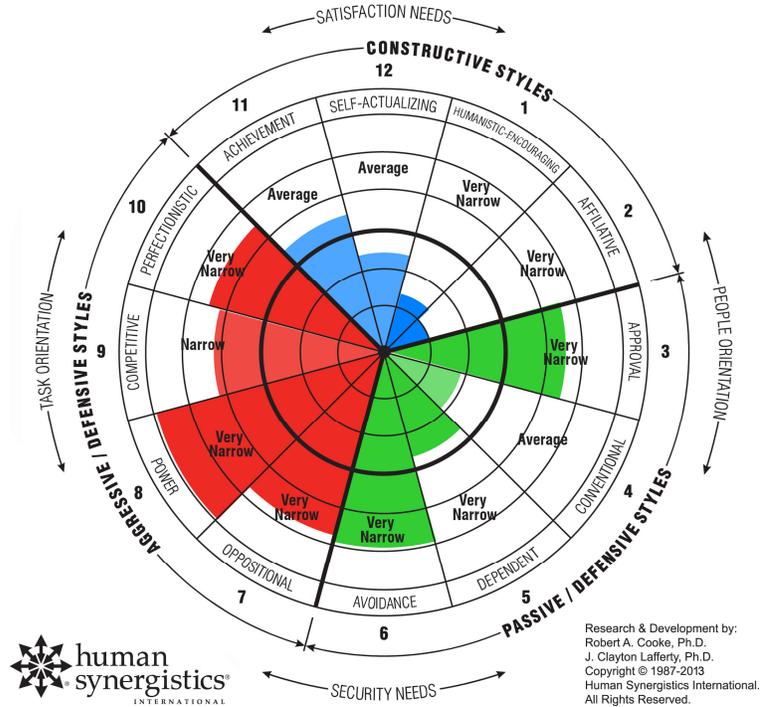
Dark shading represents a very narrow or narrow spread of opinion and denotes a standard deviation among respondents’ ratings that is lower than that for 10% or 25%, respectively, of the sets of respondents in the sample. In contrast, light shading represents a wide or very wide spread and a numerically high standard deviation (greater than that for 75% or 90% of the people in our sample). Moderate shading represents an average spread of opinion, with the standard deviation falling between the 25% and 75% percentiles on the distribution. **Figure 13** shows the different shades used for the Constructive, Passive/Defensive, and Aggressive/Defensive styles to represent a very narrow, narrow, moderate, wide, and very wide spread of opinion.

The focal leader’s results are also presented in tabular form (**see the table in Figure 12**), starting at the top with the styles along which agreement is the strongest (narrow spread of opinion) and ending with those along which agreement is the weakest (wide spread).

We use the shaded profile rather than the raw standard deviations to represent the spread because the distribution of those deviations varies across styles. For example, across leaders, there tends to be more agreement among respondents in their assessments of the Achievement style than the Self-Actualizing style. This is because the former style is more salient and observable than the latter. The standard deviations therefore are converted to percentile scores to adjust for these differences. Thus, a *raw standard deviation* of 5.0 along the Self-Actualizing style converts into and is reported as within the *Average or Moderate* range while the same *raw standard deviation* along the Achievement style falls into the *Wide* range. More generally, this conversion from raw standard deviations to percentile scores allows meaningful comparisons with respect to agreement to be made both across styles and across leaders.

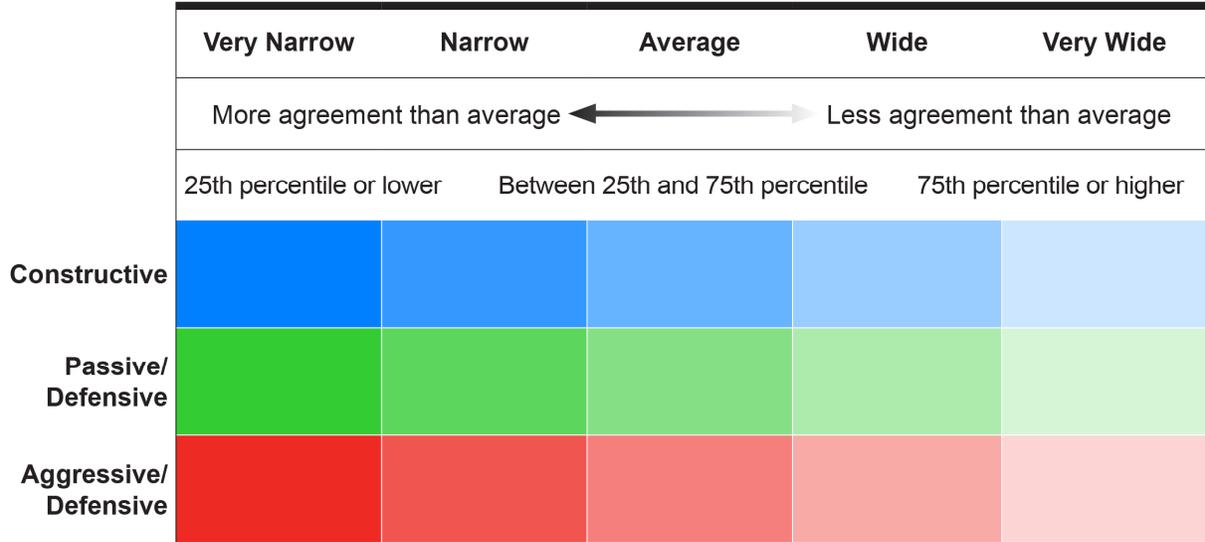
The spread of opinion results have a number of implications. Possibly most importantly, a narrow spread of opinion means that the leader interacts with and is perceived by others in the same way. A wide spread implies that the leader systematically or unknowingly interacts with others in inconsistent ways. A narrow spread suggests that the leader may have a difficult time increasing or decreasing his/her use of a style; a wide spread suggests that the leader may have an easier time adjusting the frequency with which the style is exhibited. In interpreting and debriefing these results, therefore, it is useful to discuss why some styles are displayed more consistently than others, why other styles are exhibited only when interacting with certain people, and whether it is useful or detrimental to selectively exhibit a particular style.

Figure 12.
Example of Spread of Opinion Profile and Table



STYLE	SPREAD OF OPINION
7 Oppositional	Very Narrow
2 Affiliative	Very Narrow
1 Humanistic-Encouraging	Very Narrow
10 Perfectionistic	Very Narrow
5 Dependent	Very Narrow
6 Avoidance	Very Narrow
8 Power	Very Narrow
3 Approval	Very Narrow
9 Competitive	Narrow
11 Achievement	Average
12 Self-Actualizing	Average
4 Conventional	Average

Figure 13.
Spread of Opinion Profile Shading

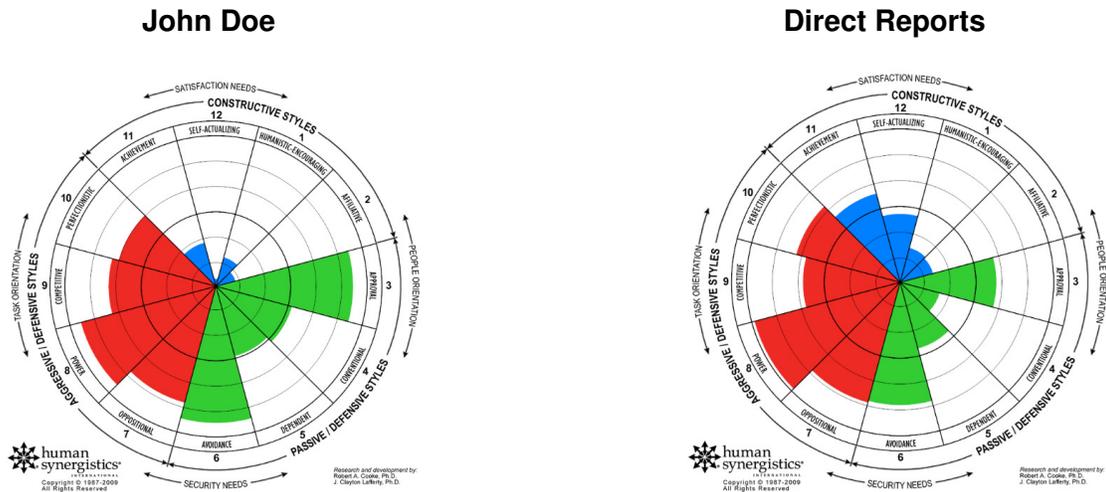


Breakout of Ratings from Different Sources

The **Breakout of Ratings from Different Sources** displays feedback by different groups or categories of respondents—bosses, peers, direct reports, etc.—in separate profiles (see **Figure 14**). An explanatory page precedes and introduces the breakout profiles. While formatted the same as the main graphic profile, the results presented by each breakout profile are based on only a subset of respondents (i.e., those from one specific respondent category). The breakout profile for the boss category can be based on responses by a single individual provided that, at the time of completing the assessment, the boss consented to have his or her responses displayed separately. To protect individual confidentiality, the breakout profiles for the other categories of respondents require at least three respondents within each category. For example, a breakout profile for peers requires **at least three respondents** who are peers; a breakout profile for direct reports requires **at least three respondents** who are direct reports, etc.

Breakout profiles for multiple bosses became available with the version of the *WorkStyles* report introduced in 2007. When two or more bosses serve as respondents and consent to having their feedback presented separately, their responses are displayed in separate breakout profiles with their names above the appropriate profiles. Additionally, with the 2007 report, the breakout profiles page includes specific profiles (for bosses, peers, direct reports, etc.) only when the relevant data are available. In other words, unlike previous versions of the report, ‘blank’ profiles never appear on the page. Similarly, if too little data were collected to develop any breakout profiles, a note appears on the page stating that no profiles can be presented.

Figure 14.
Example of Breakout Profiles



The WorkStyles Scales

1. Humanistic-Encouraging

supportive, motivates others, patient

2. Affiliative

friendly, warm, trusting

3. Approval

needs approval from others, forgiving, overly generous

4. Conventional

conforming, reliable, restrained

5. Dependent

a follower, deferential, submissive

6. Avoidance

apprehensive, self-doubting, tense

7. Oppositional

questioning, negative, critical

8. Power

authoritarian, controlling, easily angered

9. Competitive

boastful, self-centered, needs to win

10. Perfectionistic

demanding, results-oriented, driven

11. Achievement

enjoys challenges, strives for excellence, decisive

12. Self-Actualizing

enthusiastic, creative, confident

Self-Perceptions: A Closer Look

Self-Perceptions: A Closer Look is a section several pages long that only appears in **Self-Reports**. The report generator uses the individual's "style combination" to determine the narrative for this section. The narrative provides a more detailed analysis of the individual's predominant thinking and behavior styles than that found in **Self-Perceptions: Summary**.

- In **Team WorkStyles**, this section describes how a team player's style affects accomplishing tasks, teamwork, communications, and working with differences of opinion, and describes key assets together with possible counterproductive tendencies.
- In **Leadership WorkStyles**, this section addresses how the person's predominant style is likely to come into play in accomplishing tasks and engaging in teamwork, including descriptions of the person's key assets and possible areas for concern, coupled with a review of relevant findings from management research.

In both **Team WorkStyles** and **Leadership WorkStyles** reports, the topics raised can be quite different, depending on the individual's predominant combination of styles. For an individual whose predominant thinking and behavior style includes the 9-10 cluster (Competitive/Perfectionistic), the report may address listening as a key to effective teamwork. For another individual whose predominant style includes the 3-4-5 cluster (Acceptance/Conformity), the report may address how to derive satisfaction directly and independently, rather than indirectly through the reflected satisfaction of the boss or co-workers.

Others' Perceptions: A Closer Look

Others' Perceptions: A Closer Look provides a detailed analysis of respondent perceptions of the individual's style. The individual's perceived predominant thinking and behavior style determines the narrative, which is several pages in length and appears only in **Feedback Reports**. Like the **Self-Perceptions: A Closer Look** section, the topics raised differ depending on the individual's predominant style combination. For an individual whose predominant style includes the 9-10 cluster (Competitive/Perfectionistic), the report may address how to set realistic standards. For another individual whose predominant style includes the 7-8 cluster (Dogmatic/Authoritarian), the report may address how to cultivate the free exchange of ideas. The content of the **Team WorkStyles** version differs from the **Leadership WorkStyles** version.

- **Team WorkStyles** discusses how the individual's style affects accomplishing tasks, teamwork, communications, and working with differences of opinion. The text describes key assets and possible counterproductive tendencies for an individual contributor (someone who is not in a management role).

- **Leadership WorkStyles** addresses how the manager’s predominant style is likely to influence the person’s effectiveness in accomplishing tasks and engaging in teamwork, including descriptions of the person's key assets and possible areas for concern. A selected review of relevant findings from management research is also included.

Suggestions for Development

The **Suggestions for Development** section contains a series of possible activities or practices an individual can use to enhance his or her effectiveness. The suggestions are based on the person’s predominant thinking and behavior style. If feedback from others is present, the suggestions are driven by the thinking and behavior style perceived by respondents. If only self-descriptions are present, then the suggestions are driven by the self-described thinking style. In both cases, the suggestions for development are organized and labeled by topic area, such as “Listening Skills” or “Project Leadership.” The development suggestions presented differ depending on the individual’s predominant combination of styles.

This is another area where the content differs between the **Team WorkStyles** report and the **Leadership WorkStyles** report. The leadership version contains extra suggestions about topics such team leadership, project leadership, communicating the mission, feedback and coaching, etc., which are especially appropriate for managers and leaders.

Comments from Respondents

Near the end of each description-by-others assessment, respondents have the opportunity to provide observations or suggestions to help the person perform more effectively. The comments in the **Comments from Respondents** section are listed anonymously and in random order, with lines separating each comment. The comments appear exactly as respondents enter them, with no editing or review.

9. WorkStyles Composite Reports

A Composite Report summarizes the average scores for a group of participants. It compiles the participants' results to create group averages for self and others' responses as a way of providing an overall profile for a particular group.

There are two kinds of composite reports. A **Composite Self-Report** summarizes only the self-assessment results for the group of selected participants. A **Composite Feedback Report** summarizes the self- and description-by-others results for the participants in the group. However, a participant can be included in the composite report only if the comparable individual report can be printed for that participant. In effect, this means a participant's data will be included in a Composite Feedback Report only when that participant has completed the self-description assessment *and* has received feedback from *at least* three respondents.

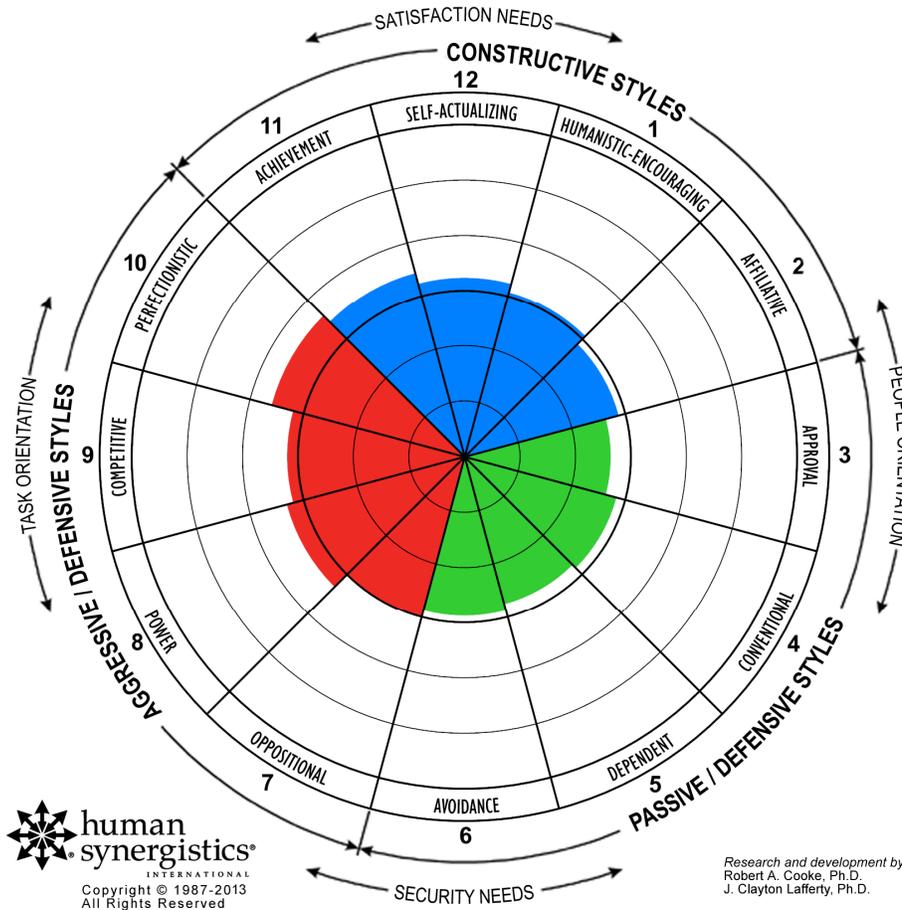
A composite report consists primarily of graphic profiles (see **Table 16**). A composite report is always accompanied by a short introduction, which outlines the purpose of the report and how to interpret the results in the circumplex. Otherwise, it contains very little narrative text.

Table 16.
Components of an ACUMEN WorkStyles Composite Report

Report Section	Composite Self	Composite Feedback
Introduction	✓	✓
Composite Self-Profile	✓	✓
Composite Description-by-Others Profile		✓
Composite Breakout of Others' Ratings		✓
Composite Breakout Profiles		✓
Composite Variability Graphics		✓
Variability of Self-Profiles	✓	✓
Variability of Description-by-Others Profiles		✓
List of Participants	✓	✓

Both the **Composite Self-Profile** and **Composite Others' Profile** show the group's average scores as shaded areas in a circumplex (see **Figure 15**). They are similar in format to the graphic profiles in an individual's report. However, instead of displaying an individual's percentile scores, the composite graphic profiles display the average percentile scores across all the participants in the group.

Figure 15.
Example of ACUMEN WorkStyles Composite Profile



Based on feedback for 12 participants

The WorkStyles Scales		
1. Humanistic-Encouraging supportive, motivates others, patient	5. Dependent a follower, deferential, submissive	9. Competitive boastful, self-centered, needs to win
2. Affiliative friendly, warm, trusting	6. Avoidance apprehensive, self-doubting, tense	10. Perfectionistic demanding, results-oriented, driven
3. Approval needs approval from others, forgiving, overly generous	7. Oppositional questioning, negative, critical	11. Achievement enjoys challenges, strives for excellence, decisive
4. Conventional conforming, reliable, restrained	8. Power authoritarian, controlling, easily angered	12. Self-Actualizing enthusiastic, creative, confident

The composite graphic profiles are followed by two graphics (one for self and one for others' responses) which summarize the variability of scores within each of the 12 scales, the **Variability of Self-Profiles** graphic and the **Variability of Description-by-Others Profiles** graphic. These are stylistically similar to the Spread of Opinion profile in an Individual Report. The variability graphics show, for each scale, the standard deviation of scores around the group average. In effect, these graphics give you an indication of the dispersion of scores among the participants within the group.

- For example, if the Composite Description-by-Others Profile shows that the average percentile score for others' responses on the Humanistic-Encouraging scale is at the 54th percentile, is that because all 12 participants have very similar scores from others (say, all between the 41st and 60th percentiles), or is it because some participants have low scores (below the 20th percentile) while some participants have high scores (above the 81st percentile)? The size of the standard deviation graphically displayed in the Variability of Description-by-Others Profiles provides this information.

A composite report also contains **Composite Breakout Profiles**. These profiles display the average feedback from different sources—bosses, peers, direct reports, etc.—for the participants in the group. For each source, the Composite Breakout Profile is produced by first creating a score from that source for each participant, then finding the average of those scores across all participants. For example, if there were 15 participants in the group, then the Composite Breakout Profile for Peers would be found by creating a “peer score” (the average rating from peers) for each of the 15 participants in the group, then calculating the average of these 15 peer scores.

- Comparisons of the Composite Breakout Profiles from different sources are only useful when the different sources have rated essentially the same set of participants. The Composite Breakout Profiles can be very misleading if the different sources rated different participants. For example, if three participants were rated only by peers and another three participants were rated only by direct reports, then a comparison of the Peer Breakout Profile and Direct Report Breakout Profile for these six participants would **not** be useful. Any differences in the Breakout Profiles could simply be a reflection of real differences between the participants, not the differences in perspective between peers and direct reports.

The information in *WorkStyles* Composite Reports can be useful in several ways:

- to give participants a better sense of how their scores compare to those of the other participants in the group (“*Is it just me? Or is everyone around here like this?*”);
- to open a discussion about which factors in the organization stimulate or inhibit certain kinds of thinking styles;
- to help decide whether special attention to a specific thinking style would be appropriate for the group; and
- to help decide, over time, whether changes are occurring within a group as a whole.

As a caveat, the results shown in composite graphic profiles may often seem underwhelming: Many times the scores fall between the 30th and 70th percentile on every scale, whereas profiles for individual participants almost always have much more pronounced differences between the high and low scores. Remember, though, that composite profiles are *averages*. The process of averaging implies that, in the absence of a profound group “culture,” the larger the number of participants that are included in a group, the more the group average will look like the 50th percentile—the population average. In large groups, small deviations from the 50th percentile may represent meaningful impacts of local group culture.

10. Summary

ACUMEN *WorkStyles* builds upon instruments with demonstrable reliability and has a basis in studies that indicate content, criterion-related, and construct-related validity. While the assessment routines in ACUMEN *WorkStyles* have a sound empirical basis, we actively work to support further research that inquires into ACUMEN *WorkStyles*'s utility and validity.

WorkStyles provides an empirically based, reliable, and valid assessment for professional development. We are proud to say that reviewers and customers report that the *WorkStyles* instruments do an excellent job of assessing leaders' and team members' potential strengths and counterproductive tendencies, relating personal thinking orientations to work performance, and providing structured experiences that promote positive change.

For further information, please contact Human Synergistics, Inc. at 734-459-1030 or visit our website at www.humansynergistics.com.

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12. Statistical Appendix

Demographic description of leadership and team norming samples

**Appendix Table 1:
Years Worked in Current Job**

Years Worked in Current Job	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. Less than one year	647	14.4	582	28.3
2. 1 - 2 years	795	17.7	433	21.1
3. 2 - 5 years	1,470	32.7	462	22.5
4. 5 - 10 years	888	19.7	280	13.6
5. More than 10 years	683	15.1	297	14.5
	<u>17</u>	<u>Missing</u>	<u>3</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 2:
Total Work Experience**

Total Work Experience	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. Less than one year	296	6.6	84	4.1
2. 1 - 2 years	341	7.6	80	3.9
3. 2 - 5 years	845	18.8	195	9.5
4. 5 - 10 years	1,109	24.6	369	18.0
5. More than 10 years	1,890	42.0	1,326	64.6
	<u>19</u>	<u>Missing</u>	<u>3</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 3:
Current Annual Earnings**

Current Annual Earnings	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. \$25,000 or less	38	.8	309	16.1
2. \$25,001 to \$37,500	100	2.2	427	22.2
3. \$37,501 to \$50,000	197	4.4	409	21.3
4. \$50,001 to \$62,500	197	4.4	372	19.4
5. \$62,501 to \$75,000	222	4.9	149	7.8
6. \$75,001 to \$87,500	189	4.2	77	4.0
7. \$87,501 to \$100,000	285	6.3	63	3.3
8. \$100,001 or more	2,737	60.8	116	6.0
9. Prefer not to state	<u>535</u>	<u>Missing</u>	<u>135</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 4:
Age**

Age	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. Under 25	3	.1	171	8.4
2. 25 - 29	138	3.1	326	16.1
3. 30 - 34	646	14.4	439	21.6
4. 35 - 39	917	20.4	360	17.8
5. 40 - 44	1,005	22.3	311	15.3
6. 45 - 49	754	16.8	220	10.8
7. 50 - 54	529	11.8	120	5.9
8. 55 or over	399	8.9	81	4.0
9. Prefer not to state	<u>109</u>	<u>Missing</u>	<u>29</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 5:
Sex**

Sex	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. Female	1,630	36.2	824	40.5
2. Male	2,816	62.6	1,213	59.5
3. Prefer not to state	<u>54</u>	<u>Missing</u>	<u>20</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 6:
Ethnic Background**

Ethnic Background	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. African American/Black	274	6.1	137	6.9
2. Asian/Pacific Islander	328	7.3	172	8.7
3. Hispanic	125	2.8	66	3.3
4. Native American	14	.3	20	1.0
5. White/Caucasian	3,210	71.3	1,556	78.3
6. Other	352	7.8	36	1.8
7. Prefer not to state	<u>197</u>	<u>Missing</u>	<u>70</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 7:
Education**

Education	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. High School	172	3.8	232	11.4
2. Technical/Vocational Degree	107	2.4	140	6.9
3. Some College	377	8.4	453	22.2
4. Bachelor's Degree	1,632	36.3	860	42.2
5. Master's Degree	1,760	39.1	302	14.8
6. Doctorate Degree	367	8.2	51	2.5
7. Prefer not to state	<u>85</u>	<u>Missing</u>	<u>19</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0

**Appendix Table 8:
Perceived Level of Stress**

Perceived Level of Stress	Leadership		Team	
	Frequency	Percent	Frequency	Percent
1. Extremely Low	20	.4	54	2.6
2. Low	105	2.3	110	5.4
3. Below Average	183	4.1	142	6.9
4. Average	1,605	35.7	753	36.7
5. Above Average	1,410	31.3	591	28.8
6. High	864	19.2	316	15.4
7. Extremely High	186	4.1	86	4.2
	<u>127</u>	<u>Missing</u>	<u>5</u>	<u>Missing</u>
Total	4,500	100.0	2,057	100.0