The Team Dimensions model

Team members who take the *Team Dimensions Profile 2.0* are guided through a process that helps them understand their talents in four fundamental work areas:

- **Possibilities**: creativity and abstract thinking
- **Interaction**: communication and promotion
- **Analysis**: logic and critical thinking
- **Realities**: organization and follow-through

Although some people are equally focused on all areas, research indicates that most of us tend toward one or two of these talents. The *Team Dimensions Profile 2.0* helps people see their strengths in particular roles, such as Creator (with a focus on Possibilities), Advancer (with a focus on Interaction), Refiner (with a focus on Analysis), or Executor (with a focus on Realities).

Each person who takes the profile is plotted on the Team Dimensions Map. The example below shows a person (represented by the dot) who is a Refiner tending toward Creator. In this case, the person has a focus on Analysis, but also a secondary focus on Possibilities. This person, therefore, is probably very much at home with theoretical or conceptual work, as these tasks combine a focus on Possibilities and Analysis.

Using the same map as a foundation, each person can use the *Team Dimensions Profile 2.0* to understand and build upon their strengths, challenges, relationships, and flexibility.
Assessment and Scoring

The Team Dimensions Profile 2.0 asks participants to respond to 80 adjectives on a five-point scale, indicating how often each adjective describes them. These responses are used to form scores on eight scales (standardized to have a mean of zero and standard deviation of one) that are located around the Team Dimensions Circumplex, as shown by the circle below. The eight scales are the following:

**Creator:** measures a creative, unstructured nature and includes adjectives like imaginative, unusual, and abstract thinking.

**Creator-Advancer:** measures a spontaneous, energetic nature and includes adjectives like spirited, passionate, and animated.

**Advancer:** measures a social, outgoing nature and includes adjectives like extroverted, talkative, and expressive.

**Advancer-Executor:** measures a socially normative, accepting nature and includes adjectives like conforming, agreeable, and receptive.

**Executor:** measures a structured, conventional nature and includes adjectives like organized, scheduled, and detail-oriented.

**Executor-Refiner:** measures a methodical, task-oriented nature and includes adjectives like systematic, factual, and practical.

**Refiner:** measures an analytical, skeptical nature and includes adjectives like logical, questioning, and evaluative.

**Refiner-Creator:** measures a theoretical, conceptual nature and includes adjectives like inquisitive, philosophical, and intellectual.

An individual's scores on these eight scales are then weighted (according to the scale's location on the circumplex) and used to map an individual inside the Team Dimensions circle, as represented by a dot. (Note that these eight scale scores are not directly reported in the profile.) As can be seen on page 11 of the profile, the Team Dimensions circle is divided into 13 sections (including the middle section). An individual's feedback is based on the section in which his/her dot falls. The distance of the dot from the center of the circle is also meaningful and indicates the strength of his/her preference for a given role. Dots that are farther away from the center indicate a stronger preference.
Overview of the Validation Process

Psychological instruments are used to measure abstract qualities that we can’t touch or see. These are characteristics like intelligence, extroversion, or honesty. So how do researchers evaluate these instruments? How do we know whether such tools are actually providing accurate information about these characteristics or just generating haphazard feedback that sounds believable? Simply put, if an instrument is indeed useful and accurate, it should meet a variety of different standards that have been established by the scientific community throughout the years. Validation is the process through which researchers assess the quality of a psychological instrument by testing the tool against these different standards. This paper is designed to help you understand these different standards and see how Inscape’s *Team Dimensions Profile 2.0* performs under examination.

Validation asks two fundamental questions:

1. **How reliable is the tool?** That is, researchers ask if an instrument measures in a way that is consistent and dependable. If the results from a tool contain a lot of random variation, it will be deemed less reliable.

2. **How valid is the tool?** That is, researchers ask if an instrument measures accurately. The more that a tool measures what it proposes to measure, the more valid the tool is.

Note that no psychometric tool is perfectly reliable or perfectly valid. All psychological instruments are subject to various sources of error. Reliability and validity are matters of degree on continuous scales, rather than reliable/unreliable and valid/invalid on dichotomous scales. Consequently, it is more appropriate to ask, “How much evidence do we have for the reliability of this tool?” than “Is this tool reliable?”
Reliability

Internal reliability evaluates the degree of correlation among questions that profess to measure the same thing. That is, each of the eight scales in the Team Dimensions model is measured using a series of different items (i.e., questions in the form of adjectives or phrases, such as visionary, imaginative, original, unstructured, or innovative). Researchers recognize that if all of the items on a given scale (e.g., the Creator scale) are in fact measuring the same thing (e.g., a focus on Possibilities), they should all correlate with each other to some degree. In other words, all of the items on a scale should be consistent with each other. A statistic called Cronbach’s Alpha is usually regarded as the best method of evaluating internal consistency.

Much like the reliability coefficients described above, Cronbach’s Alpha expresses the degree of correlation as a specific number, which typically varies between 0.0 and 1.0. If the value of alpha is 0.0, then there is no relationship among the items/statements on a given scale. On the other hand, if all the statements in a questionnaire are identical, then the value of alpha will be 1.0, which indicates absolute internal consistency. Cronbach’s Alpha is calculated separately for each of the tool’s eight scales.

The following guidelines are frequently used to evaluate the quality of a scale’s internal reliability: Alpha values above .70 are generally considered acceptable and satisfactory, alpha values above .80 are usually considered quite good, and alpha values above .90 are considered to reflect exceptional internal consistency. In fact, alpha values that are too high may indicate that the items on a scale are redundant or too similar. In such cases, many of the instrument’s items may provide very little new information about a respondent.

Alpha coefficients were calculated for sample of 1606 respondents. The demographics of this sample are shown in Appendix 1.
Team Dimensions Profile 2.0 demonstrates good-to-excellent internal consistency, as shown by the alpha values listed in Table 1. All reliabilities are well above .70, with a median of .825.

Table 1. Scale Reliabilities.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator</td>
<td>.83</td>
<td>11</td>
</tr>
<tr>
<td>Creator-Advancer</td>
<td>.86</td>
<td>10</td>
</tr>
<tr>
<td>Advancer</td>
<td>.87</td>
<td>8</td>
</tr>
<tr>
<td>Advancer-Executor</td>
<td>.75</td>
<td>10</td>
</tr>
<tr>
<td>Executor</td>
<td>.86</td>
<td>10</td>
</tr>
<tr>
<td>Executor-Refiner</td>
<td>.81</td>
<td>8</td>
</tr>
<tr>
<td>Refiner</td>
<td>.75</td>
<td>10</td>
</tr>
<tr>
<td>Refiner-Creator</td>
<td>.82</td>
<td>10</td>
</tr>
</tbody>
</table>

N=1606

Validity

As already mentioned, validity indicates the degree to which a tool measures what it has been designed to measure. Assessing the evidence for the validity of a psychological tool that measures abstract qualities can be tricky. There are, however, a number of basic strategies that researchers use to answer the question, “How well is this instrument measuring what it says it’s measuring?” The validation strategies that will be discussed here fall under the heading of construct validity.

Construct Validity

Construct validity examines the validity of a tool on a highly theoretical level. A “construct” is an abstract idea or concept (such as intelligence, dominance, or honesty) that is used to make sense of our experience. The Advancer scale of the Team Dimensions Profile 2.0, for example, measures a particular construct (i.e., the tendency to engage in social, interactive activities.) This construct, in turn, is theoretically related to a variety of other constructs. For instance, it is reasonable to assume that someone who is employed in a sales position will be high on this construct of interactivity. Thus, interactive tendencies and employment in the field of sales are theoretically linked. Consequently, if our measure of an interactive tendency has strong evidence of validity, salespeople should score highly on the Advancer scale. This is essentially what researchers do when they examine construct validity. First, they specify a series of theoretical relationships (e.g., the construct of interactivity is theoretically related to the constructs of X, Y, and Z). Then they test these theoretical relationships empirically to see if the relationships actually exist. If the proposed relationships do exist, the instrument is thought to have more evidence of validity.
Scale Intercorrelations

As you might imagine, there are a variety of different ways to test construct validity. First, we can examine the evidence of validity of an instrument as a whole. Instruments like the Team Dimensions Profile 2.0 propose an underlying model in which the scales within the tool have a specific relationship to each other. Researchers examine the actual relationship among the scales to see if they reflect the theoretical relationship proposed by the model.

The Team Dimensions model proposes that adjacent scales (e.g., Creator and Creator-Advancer) will have moderate correlations. That is, these correlations should be considerably smaller than the alpha reliabilities of the individual scales. For example, the correlation between the Creator-Advancer and Advancer scales (.50) should be substantially lower than the alpha reliability of the Advancer scale (.87). On the other hand, complementary scales (e.g., Advancer/Refiner, Creator/Executor) are theoretically opposite, so they should have strong negative correlations. Table 2 below shows data obtained from a 2005–2006 sample of 1,606 respondents who completed the Team Dimensions assessment. The correlations among all eight scales show strong support for the model. That is, we can observe moderate positive correlations among adjacent scales and strong negative correlations between opposite scales.

Table 2. Scale Intercorrelations.

<table>
<thead>
<tr>
<th></th>
<th>Creator</th>
<th>Creator-Advancer</th>
<th>Advancer</th>
<th>Advancer-Executor</th>
<th>Executor</th>
<th>Executor-Refiner</th>
<th>Refiner</th>
<th>Refiner-Creator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creator-Advancer</td>
<td>.34</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancer</td>
<td>-.01</td>
<td>.50</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancer-Executor</td>
<td>-.35</td>
<td>-.08</td>
<td>.23</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executor</td>
<td>-.67</td>
<td>-.57</td>
<td>-.28</td>
<td>.21</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executor-Refiner</td>
<td>-.54</td>
<td>-.62</td>
<td>-.48</td>
<td>-.06</td>
<td>.54</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refiner</td>
<td>-.01</td>
<td>-.54</td>
<td>-.64</td>
<td>-.40</td>
<td>.08</td>
<td>.38</td>
<td>.75</td>
<td>.82</td>
</tr>
<tr>
<td>Refiner-Creator</td>
<td>.34</td>
<td>-.04</td>
<td>-.36</td>
<td>-.50</td>
<td>-.40</td>
<td>-.18</td>
<td>.28</td>
<td>.82</td>
</tr>
</tbody>
</table>

Cronbach’s Alpha reliabilities are shown in bold along the diagonal, and the correlation coefficients among scales are shown within the body of the table. Correlation coefficients range from -1 to +1. A correlation of +1 indicates that two variables are perfectly positively correlated such that as one variable increases, the other variable increases by a proportional amount. A correlation of -1 indicates that two variables are perfectly negatively correlated, such that as one variable increases, the other variable decreases by a proportional amount. A correlation of 0 indicates that two variables are completely unrelated; N=1606, as shown in Appendix 1.
Because the Team Dimensions model proposes that the eight scales are arranged as a circumplex, an even more strict set of statistical assumptions are required of the data. The pattern of correlations for a given scale is expected to be arranged in a particular order. As can be seen in Table 3 below, the strongest theorized positive correlation for a given scale is labeled \( r_1 \). The second strongest positive correlation is labeled \( r_2 \), and so on. In this case, \( r_4 \) represents the correlation with a theoretically opposite scale. Consequently, \( r_4 \) should be a reasonably strong negative correlation. For each scale, we should observe the following relationship if the scales do, in fact, support a circumplex structure: \( r_1 > r_2 > r_3 > r_4 \).

**Table 3. Expected Scale Intercorrelations.**

<table>
<thead>
<tr>
<th></th>
<th>Creator</th>
<th>Creator-Advancer</th>
<th>Advancer</th>
<th>Advancer-Executor</th>
<th>Executor</th>
<th>Executor-Refiner</th>
<th>Refiner</th>
<th>Refiner-Creator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator</td>
<td>.100</td>
<td>.100</td>
<td></td>
<td></td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creator-Advancer</td>
<td></td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancer</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancer-Executor</td>
<td>( r_3 )</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executor</td>
<td>( r_4 )</td>
<td>( r_3 )</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executor-Refiner</td>
<td>( r_3 )</td>
<td>( r_4 )</td>
<td>( r_3 )</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refiner</td>
<td>( r_2 )</td>
<td>( r_3 )</td>
<td>( r_4 )</td>
<td>( r_3 )</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
<td></td>
</tr>
<tr>
<td>Refiner-Creator</td>
<td>( r_1 )</td>
<td>( r_2 )</td>
<td>( r_3 )</td>
<td>( r_4 )</td>
<td>( r_3 )</td>
<td>( r_2 )</td>
<td>( r_1 )</td>
<td>.100</td>
</tr>
</tbody>
</table>

Looking at Table 2, we do, in fact, observe a \( r_1 > r_2 > r_3 > r_4 \) pattern for each scale. In addition, we can examine the magnitude of these correlations in comparison to the theoretically expected magnitudes. The predicted magnitudes of \( r_1, r_2, r_3, \) and \( r_4 \) under a circumplex structure are listed in Table 4, as described by Wiggins (1995). The “actual” \( r_x \) values are the median correlations for a given \( r_x \).

Although the actual and predicted values are not exactly the same (a near impossible standard for practical purposes), the magnitude of the actual and predicted correlation values is quite similar, thus providing additional support for the Team Dimensions circumplex model and the ability of the *Team Dimensions Profile 2.0* to measure this model.

**Table 4. Actual and Predicted Scale Relationships.**

<table>
<thead>
<tr>
<th>( r_1 )</th>
<th>&gt;</th>
<th>( r_2 )</th>
<th>&gt;</th>
<th>( r_3 )</th>
<th>&gt;</th>
<th>( r_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>.34</td>
<td>&gt;</td>
<td>-.05</td>
<td>&gt;</td>
<td>-.44</td>
<td>&gt;</td>
<td>-.63</td>
</tr>
<tr>
<td>.42</td>
<td>&gt;</td>
<td>.03</td>
<td>&gt;</td>
<td>-.36</td>
<td>&gt;</td>
<td>-.73</td>
</tr>
</tbody>
</table>

Actual (median) Predicted
The Dimensionality of the Team Dimensions Model: Multidimensional Scaling

A statistical technique called multidimensional scaling also adds support to the Team Dimensions model. This technique has two advantages. First, it allows for a visual inspection of the relationship among the eight scales. Second, this technique allows researchers to look at all of the scales simultaneously. In Figure 1 below, scales that are closer together have a stronger positive relationship. Scales that are farther apart are more dissimilar. The circumplex Team Dimensions model predicts that the eight scales will be arranged in a circular format at equal intervals.

As can be seen in Figure 1, the scales are arranged in a way that is expected by the Team Dimensions model. Although the eight scales do not form a perfectly equidistant circle (as predicted by the model), this theoretical ideal is nearly impossible to obtain with actual data. The actual distance between the scales, however, is roughly equal, providing strong support for the model and the assessment of that model.

Figure 1. MDS Two-Dimensional Solution.

As can be seen above, all scales are closest to the scales that are theoretically adjacent to them in the model. For instance, the Refiner scale is closest to the Refiner-Creator scale and Executor-Refiner scale, as predicted by the model. In addition, scales that are theoretically opposite (e.g., the Creator/Executor or Refiner/Advancer) are farthest away from each other on the plot. Consequently,
this analysis adds strong support for the two-dimensional Team Dimensions model and the ability of the Team Dimensions assessment to measure that model.

Additionally, the S-stress of the model is .01162, and the RSQ value is .99867. These values reflect the ability of the model to fit the data. Lower S-stress values are preferred (with a minimum of 0) and higher RSQ values are preferred (with a maximum of 1). As is obvious, both of these values are almost ideal, suggesting that the two-dimensional Team Dimensions model fits the participant data exceptionally well. The RSQ values indicate that 99.867% of the variability in the participant data is accounted for by the model, which indicates an extraordinarily good fit.

The Dimensionality of the Team Dimensions Model: Factor Analysis
(Note that this section may require some statistical background)

To further explore the dimensionality of the model, a principle-components factor analysis was performed on all eight scales using a varimax rotation. The eigenvalues below clearly reinforce the two-dimensional structure underlying the eight scales, as shown in Table 5. Only two components demonstrate eigenvalues above 1, and both of these eigenvalues are well above 1. Further, Components 3 through 8 all have eigenvalues that decrease in a smooth fashion and are meaningfully below 0. Consequently, regardless of whether we use Kaiser’s Criterion or a scree plot method of determining the number of factors to extract, the number of retained factors is two, as predicted by the model.

Table 5. Factor Analysis Eigenvalues.

<table>
<thead>
<tr>
<th>Component</th>
<th>Eigenvalues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.14</td>
</tr>
<tr>
<td>2</td>
<td>2.41</td>
</tr>
<tr>
<td>3</td>
<td>0.69</td>
</tr>
<tr>
<td>4</td>
<td>0.56</td>
</tr>
<tr>
<td>5</td>
<td>0.44</td>
</tr>
<tr>
<td>6</td>
<td>0.40</td>
</tr>
<tr>
<td>7</td>
<td>0.34</td>
</tr>
<tr>
<td>8</td>
<td>0.03</td>
</tr>
</tbody>
</table>

N=1606

The rotated factor loadings are listed in Table 6. Note that a procrustean rotation was not performed, so the loadings reflect the original, albeit somewhat arbitrary, varimax rotation. This presentation, then, is rotated roughly 45 degrees from the model presented in the Team Dimensions Profile 2.0. The pattern of loadings is as expected for a circumplex model. That is, with a circumplex model, we would expect that some scales would have high loadings on one component and near zero loadings.
on the other component (e.g., Advancer-Executor, Executor-Refiner, Refiner-Creator, Creator-Advancer), and some scales would have moderately high loadings on both components (e.g., Advancer, Executor, Refiner, and Creator).

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancer</td>
<td>-.65</td>
<td>-.55</td>
</tr>
<tr>
<td>Advancer-Executor</td>
<td>.02</td>
<td>-.75</td>
</tr>
<tr>
<td>Executor</td>
<td>.76</td>
<td>-.44</td>
</tr>
<tr>
<td>Executor-Refiner</td>
<td>.85</td>
<td>-.05</td>
</tr>
<tr>
<td>Refiner</td>
<td>.58</td>
<td>.62</td>
</tr>
<tr>
<td>Refiner-Creator</td>
<td>-.11</td>
<td>.80</td>
</tr>
<tr>
<td>Creator</td>
<td>-.60</td>
<td>.57</td>
</tr>
<tr>
<td>Creator-Advancer</td>
<td>-.84</td>
<td>-.09</td>
</tr>
</tbody>
</table>

Further the pattern of negative and positive loadings are as expected. For example, the Refiner and Advancer scales share no dimensions in common (in this rotation), and consequently show an opposing pattern of negative loadings (the Advancer scale) and positive loadings (the Refiner scale). On the other hand, the Advancer and Creator scales would be expected to share one component (on the above rotation) but be opposite on the other component. This is what we observe, where both scales are negatively loaded on component 1, but have opposite loadings on Component 2.

External Validation of the Team Dimensions Model and Assessment

The process of model/instrument validation requires that a tool demonstrate actual relationships with outside criteria (like occupation) that are theoretically predicted by the tool’s underlying model. In this case, the Team Dimensions model and assessment should, in theory, relate to a person’s occupation. That is, we would expect people in some jobs, like sales positions, to lean toward Interaction. We would expect people in other job categories, like mechanical or technical positions, to lean toward Analysis.

Ten different occupational groups were chosen for this validation. For each group, an average score was calculated on both of the two dimensions in the Team Dimensions model, and then the angular location of the group was calculated. As shown around the circle in Figure 2, zero degrees is located at the bottom of the circle and rotated counterclockwise. Table 7 shows the angular location of each occupation and the role segment associated with each occupation.
Table 7. Angular Location of Occupational Groups on the Team Dimensions model.

<table>
<thead>
<tr>
<th>Occupational Group</th>
<th>Role Segment</th>
<th>Angle</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service</td>
<td>Advancer, toward Executor</td>
<td>52</td>
<td>43</td>
</tr>
<tr>
<td>Sales</td>
<td>Advancer</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Clergy</td>
<td>Creator, toward Advancer</td>
<td>147</td>
<td>20</td>
</tr>
<tr>
<td>Teacher/Educator</td>
<td>Creator, toward Advancer</td>
<td>149</td>
<td>52</td>
</tr>
<tr>
<td>Consultant</td>
<td>Creator, toward Advancer</td>
<td>156</td>
<td>8</td>
</tr>
<tr>
<td>Executive</td>
<td>Creator, toward Refiner</td>
<td>204</td>
<td>295</td>
</tr>
<tr>
<td>Mechanical/Technical</td>
<td>Refiner</td>
<td>279</td>
<td>66</td>
</tr>
<tr>
<td>Skilled Trades</td>
<td>Executor, toward Refiner</td>
<td>337</td>
<td>18</td>
</tr>
<tr>
<td>Homemaker</td>
<td>Executor, toward Advancer</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Secretary/Clerical</td>
<td>Executor, toward Advancer</td>
<td>37</td>
<td>110</td>
</tr>
</tbody>
</table>

Each of these occupations is placed around the Team Dimensions map in Figure 2 for visual inspection. Although the examination of occupation-angle fit is somewhat subjective, the results appear to make a great deal of intuitive sense and seem to support the model.

Figure 2. Placement of Occupational Groups in the Team Dimensions Map.
Each occupational group is discussed individually below in the context of the Team Dimensions model. Where available, the Standard Occupational Code (SOC) is provided. It is important to note that these occupational-group placements represent group averages and that there was a fair amount of variability within each occupational group. Further, this effort at validation is built on the assumption that individuals who are inclined toward certain activities will be more likely to 1) pursue and enter occupations that satisfy, require, and reward these activities and 2) stay in these occupations.

**Customer Service (SOC: 43-4051):** Individuals employed in customer service were expected to lean primarily toward Interaction, but also toward Realities, which is where this group did fall. This section of the team map has previously been labeled “Normative,” as it identifies people who rely heavily on accepted norms and societal expectations. Words such as “conforming,” “agreeable,” and “team player” are used to measure this portion of the team map. The customer service occupation requires a great deal of interaction with customers, responding to problems and questions. Consequently, this group was expected to tend toward Interaction. But because the job also requires some concrete attention to detail and some routine work, and does not necessarily require a great deal of creativity, this occupational group was expected to also lean toward Realities.

**Sales (SOC: 41-0000):** Individuals employed in sales were expected to have such a strong leaning toward Interaction that this propensity would overwhelm any of the other three areas of the circle. As expected, the angular location of this group was close to 90 degrees.

**Clergy (SOC: 21-2011):** The U.S. Department of Labor describes the responsibilities of this position as “Conduct religious worship and perform other spiritual functions associated with beliefs and practices of religious faith or denomination. Provide spiritual and moral guidance and assistance to members.” Consequently, individuals employed as clergy were expected to lean toward Interaction, as the job requires interaction with religious followers. These individuals were also expected to lean toward Possibilities because they work with spiritual aspects of the human experience that are not tangible or concrete. The data confirm this expectation.

**Teacher/Educator (SOC: 25-0000):** Individuals employed as teachers or educators were expected to lean toward both Possibilities and Interaction. These people were expected to lean toward Interaction because education and teaching requires a great deal of contact with students. They were expected to lean toward Possibilities because teachers often deal with ideas and abstract concepts. The data confirm this expectation.
Consultant: This job title includes a broad group of different individuals and was included more for exploratory purposes than for validation purposes. It was expected, however, that consultants would lean toward both Possibilities and Interaction, as was found in this small sample. It was expected that Interaction would be necessary for most successful consultants because they need to maintain an ongoing client base and work with people on a regular basis. It was also expected that these individuals would lean toward Possibilities because they frequently work with abstract problems and ideas. Further, many independent consultants need to be entrepreneurial and dynamic to make a consistent living. The space on the team map where Possibilities and Interaction intersect was previously described as “Spontaneous.”

Executive (SOC: 11-1011): The U.S. Department of Labor describes the responsibilities of this position as “Determine and formulate policies and provide the overall direction of companies or private and public sector organizations.” As the data confirms, these people were expected to have a strong focus on Possibilities because they are responsible for leading organizations and performing a high level of abstract thinking and decision-making. They were also expected to have some tendency toward Analysis because this position often requires job holders to make decisions based on a high level of logic and critical thinking. The intersection of Possibilities and Analysis has been described as “Conceptual” and is measured with words like “complex” and “intellectual.” It is interesting to note that the average executive fell in the least common of the 12 role segments surrounding the team map: Creator leaning toward Refiner.

Mechanical/Technical: The individuals in this occupational group span a number of different jobs, but all share job duties that require a high degree of analysis, logical problem solving, and critical thinking. Consequently, it was expected that they would average at approximately 270 degrees, leaning toward Analysis. The data support that this group did lean toward Analysis and slightly toward Realities, which may reflect that the individuals in this group are inclined toward work and activities that are slightly more concrete than abstract.

Skilled Trades: Again, the individuals in this occupational group span a number of different jobs, but all share job duties that are fairly concrete and physical in nature. Consequently, this group was expected to lean toward Realities, which it did. In addition, many of these jobs also require a degree of logical problem solving, so some tendency toward Analysis was also expected. As predicted, this occupational group averaged at the intersection of Realities and Analysis, an area of the Team Dimensions map that was previously described as “Methodical.”
**Homemaker:** This job title was included in the analysis more for exploratory purposes than for validation purposes. There was some expectation, however, that this occupational group would average at the intersection of Realities and Interaction, which is a section of the Team Dimensions map that was previously described as “normative,” as it identifies people who rely heavily on accepted norms and societal expectations. This occupational-group placement was expected because the vocation of homemaker is often considered to be traditional in nature.

**Secretary/Clerical (SOC: 43-6000):** This occupational group was expected to lean toward Realities because of the large degree of organizational responsibilities associated with the position. It was also expected that this group would lean toward Interaction because the job responsibilities require a good deal of interaction with those outside of the company, similar to those in customer service. This expectation was supported by the data.
Appendix 1. Development Sample Demographics (N=1606)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
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<table>
<thead>
<tr>
<th>Age</th>
<th>Under 18</th>
<th>&gt;0.1</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>18-25</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>46-55</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>56 or older</td>
<td>13</td>
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</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>African American</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Asian American</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Caucasian</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Native American</td>
<td>2</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>Not specified</td>
<td>&gt;0.1</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Education</th>
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<tbody>
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<td></td>
<td>High school</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Some college</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Technical/trade school</td>
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<tr>
<td></td>
<td>College grad</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Graduate degree</td>
<td>32</td>
</tr>
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</table>

To evaluate the usefulness of the *Team Dimensions Profile 2.0* across different ethnic groups, several analyses were performed. First, the internal reliability coefficients for all eight scales were calculated separately on four different samples: African American, Asian American, Caucasian, and Hispanic (the Native American group was not included separately because too few respondents were available). This resulted in the calculation of 32 scale reliability coefficients (eight scales x four samples.) Of these 32 reliability coefficients, 30 were above .70, and all 32 were at or above .67. (Note that given the large number of analyses performed, it was expected that some would fall below .70 simply based on the natural error associated with this analysis.) These results suggest strong evidence for the reliability of the *Team Dimensions Profile 2.0* scales across a variety of ethnic populations.

Further, it is important to understand the relationship between ethnic background and profile score. An analysis of variance (ANOVA) was performed on the eight scale means across four ethnic groups: African American, Asian American, Caucasian, and Hispanic. Results indicated that there was no significant difference (p<.05) on any of the eight scales based on ethnic background (df=1562). Further, ethnic background accounted for substantially less than 1% of the variance on each of the eight scales.
Appendix 2. The Distribution of Team Dimensions Scores (N=1606)

The distribution of team roles is presented below. Each role segment covers 30 degrees of the Team Dimensions Map (except Flexer, which is located at the center of the circle.) A person is assigned to a given role segment (and role) if their Team Dimensions score falls in the area of the circle corresponding to that segment. As can be seen below, the Creator, Advancer, Refiner, and Executor roles are distributed roughly evenly. Although there is some variability in role distribution, all of these roles are within five percentage points of each other. The segment percentages show more variability, ranging from 5.0% to 10.3%. The percentages below suggest that we are more likely to see a combination of a Possibilities focus and an Interaction focus (Advancer-Creator/Creator-Advancer) or a combination of a Realities focus and an Analysis focus (Refiner-Executor/Executor-Refiner) than a combination of a Possibility focus and an Analysis focus (Creator-Refiner/Refiner-Creator) or a combination of a Realities focus and an Interaction focus (Executor-Advancer/Advancer-Executor).

<table>
<thead>
<tr>
<th>Segment</th>
<th>Frequency</th>
<th>Segment Percent</th>
<th>Role Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator-Refiner</td>
<td>85</td>
<td>5.3</td>
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<tr>
<td>Creator-Balanced</td>
<td>116</td>
<td>7.2</td>
<td>22.8</td>
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<tr>
<td>Creator-Advancer</td>
<td>165</td>
<td>10.3</td>
<td></td>
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<tr>
<td>Advancer-Creator</td>
<td>133</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>Advancer-Balanced</td>
<td>115</td>
<td>7.2</td>
<td>22.7</td>
</tr>
<tr>
<td>Advancer-Executor</td>
<td>115</td>
<td>7.2</td>
<td></td>
</tr>
<tr>
<td>Refiner-Creator</td>
<td>104</td>
<td>6.5</td>
<td>24.4</td>
</tr>
<tr>
<td>Refiner-Balanced</td>
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<td>9.0</td>
<td></td>
</tr>
<tr>
<td>Refiner-Executor</td>
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<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Executor-Refiner</td>
<td>136</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Executor-Balanced</td>
<td>133</td>
<td>8.3</td>
<td>25.3</td>
</tr>
<tr>
<td>Executor-Advancer</td>
<td>137</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Flexer</td>
<td>80</td>
<td>5.0</td>
<td>5.0</td>
</tr>
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</table>