

Hard Studies on the Soft Parts of Business

Dr. Bob Smith

Using Science to Help You Increase Your Profits

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Contents

Introduction	5
General Studies	
Customer Service	11
Sales	
Professional Services Firm	16
Fitness Company	18
Management	
Successful Store Managers	22
Managers vs. Non-Managers	26
Women in Management	29
Property Managers	33
Culture and Sex	38
Specific Studies	
Predicting Success for a Manager Role	43
Accountants vs. Financial Analysts	49
Reducing Lost-Time Injuries in Large Construction Companies	60
Appendix	70

*Galileo, Leibnitz and Newton gave us
mathematical tools to model the physical world*

*Einstein, Heisenberg and Schrodinger gave us
mathematical tools to model the sub-atomic world*

*Hartman, Tregos and Moore have given us
mathematical tools to model the people world.*

This new science has helped companies:

- * A study conducted on a national dry-cleaning company resulted in that company being able to reduce hiring people who would fail as store managers by more than 25%.
- * A hiring study on the heavy construction industry resulted in information and a system whereby construction companies could reduce the occurrence of lost-time injuries by more than 50%, resulting in a fewer injuries to workers, a safer work environment, lower health care and legal costs, and lower turnover.
- * The use of the Zero Risk HR hiring system saved a large auto-dealership group more than \$30,000,000 the first year in use with a total cost of less than \$ 100,000 (numbers provided by the client).
- * A management study for a fitness club company resulted in providing hiring assistance that will lead to a doubling of their annual profits.
- * A study for a national restaurant chain identified management inconsistencies that had led to above-market management turnover. By instituting the recommendations from the study, the client was able to reduce turnover by 8% points – which translated to a savings of more than \$ 4 Million a year.

Introduction

Situation A

In 1995, Pfizer Pharmaceutical was awarded a patent for a synthetic drug, Sildenafil, which its scientists developed to treat two heart conditions: angina and hypertension. The phase I clinical trials gave the researchers indications that this drug was not useful for treating angina but it had the consistent side effect of increasing male patients' erections. And so Pfizer was pleasantly surprised that their new product, which they called Viagra, had a significant market value, having gone from a possible heart medicine to a proven solution for erectile dysfunction (it had sales of over one billion dollars a year for the first six years). But the scientists in the lab were clueless about what Sildenafil would eventually do because they employed inductive methodologies for their scientific approach.

Situation B

In 1969 Chrysler Motors enlisted the help of engineers from NASA to design a front nose and rear wing for the Dodge Charger 500 to make it faster than all other NASCAR cars. Prior to ever building this car, which ended up being called a Dodge Charger Daytona, the engineers predicted that the car with their modifications would be able to average 201 miles per hour on the Talladega racetrack. No NASCAR car had ever averaged 200 miles per hour on a NASCAR racetrack prior to 1970, so Dodge executives were excited that the Daytona project might accomplish this. On March 24, 1970 Buddy Baker drove a 1970 Dodge Charger

Daytona 200.4 miles an hour at Talladega. In the “lab” the scientists knew how fast the Daytona would be able to go because they used deductive methodologies for their scientific approach.

In the two above cases the general populations did not care what kind of scientific approach researchers used to invent things that made their lives or businesses better. And when the work of pharmacological scientists leads to discoveries like Viagra, the executives don’t care that their scientists use inductive methodologies, either. But Viagra is the exception when using inductive methods because inductive methods have a hit and miss aspect that makes research expensive, time consuming, and often futile (which is why there are so many clinical trials that end without success). On the other hand, the success the engineers had with the Daytona is the norm when using deductive methods. The engineers who designed the Daytona knew before any money was spent on building an actual car that their design would accomplish the executives’ goals. Deductive sciences have made possible the building of bridges, airplanes, microwaves, and even atomic bombs on paper (in computers) so we don’t have to do laborious, expensive and often dangerous trials to successfully build these inventions.

This distinction can be very important for businesses and consumers because deductive methods lead to lower costs, shorter time-to-market, multiple applications, and greater precision. Since 1955 we have had a deductive science of value that enables scientists to be able to design and model solutions for the people aspects of their businesses and organizations. No longer do leaders have to go through very expensive (and sloppy) trial by error when it comes to

hiring and training sales people, clerks, managers, or customer service personnel. Just as with engineering and physics, we have a deductive, mathematical system that enables us to model, measure and understand human behavior and performance. We now have a measuring device (a value profile) that generates a model of how people think, derive meaning, make decisions and exercise judgment. This profile is an axiologist's tool just as a clock, a speedometer, a ruler, and a scale are tools for a physicist.

Since 1987 I have been using value profiles in my work. Just as clocks have been improved and have become more precise over the years (from a water-drop clock of Galileo to an atomic clock of the Twentieth Century), so too have value profiles become more precise over the years. In 1988, I began with the Hartman Value Profile, and then in 2001 moved to the Kinsel-Hartman Profile (which subsequently was named the Hartman-Kinsel Profile), and now in 2010 we employ the Clear Direction Profile. All three profiles employ formal axiology and are variations on the original Hartman Value Profile developed in the 1960s by Drs. Trego and Hartman. The Clear Direction Profile is the most precise, employing statement improvements that I worked out with three Swedish axiologists in 2008 and scoring improvements presented by Dr. Mark Moore at the Academy of Value Sciences in 2006.

This booklet is designed to introduce different applications of formal axiology. It is also a review of a number of studies so that practitioners may learn what we have done and further advance the constructive uses of value profiles for personal and professional development. Throughout these decades I and other axiologists have conducted

validation studies to insure that we were actually doing what we believed we were doing. This booklet is not intended to replace the Validation Compendium, complied in the early 2000s, which summarizes different validity studies of the profile (like the official NASCAR timer being employed to prove that Buddy Baker actually averaged more than 200 mph). This booklet is designed to show the practical outcomes of using the profile in businesses and what we have learned about thinking that leads to success in different positions in business.

Some examples of what we have learned and measured:

- * Too much empathy gets in the way of people being effective, long-term customer service employees.
- * Managers can be natural at managing a task or at managing a team – but they won’t do the other effectively.
- * Cultural differences are critically important while differences based on sex really don’t apply.
- * How a person thinks enables us to predict whether it is likely that he will have a loss-time injury and instructs us on how best to train managers of people in dangerous jobs.

We hope the applications presented in this booklet give you a multi-faceted view of how this young (1955) deductive science can be used to help you run your business better, be more effective with your employees, and help you provide a better product for your customer and shareholders.

Dr. Bob Smith

Basic Studies

The following cases are what we consider to be basic applications of formal axiology in customer service, sales, and management. Because of the importance of making sure our marketplace is fair to people without regard to their sex, we have conducted studies pertaining to the differences of men and women. Because colleagues have used axiology in different countries, we have also included an extensive study we did among different cultures.

Customer Service

For the following customer service study all of the members of sample groups were employed as customer service personnel. They were distinguished as those who were successful from those who were not successful in customer service. The objective criterion for distinguishing these people were letters of commendation from satisfied customers and management's recognition of the person's success in this role.

A study sample is of 41 customer service personnel working for James River Corporation. The criterion used to distinguish one group from the other was success in the customer service role. The sample was divided into the two groups: those who had been both commended for their service by customers and had been recognized by their colleagues within the company for their exemplary customer service, and those who had neither been commended by their customers nor their colleagues.

The marketplace distinguishes consistently good performers from mediocre and bad performers. This study measured the differences between those two groups as they functioned in customer service roles. General observations would lead one to conclude that those who are exemplary are better able to find practical solutions, communicate with others, instill confidence in their ability to perform, and be able to be persistent without being stubbornly insistent. To confirm the validity of the Profile, these abilities would have to be distinguished by statistically significant differences in the dimensional scores of measuring common sense, personal competence, and personal duty (E1, E2, and S2).

The results confirmed that those who were exemplary in customer service had greater abilities in all dimensions measured by the Hartman Value Profile and statistically higher abilities to reason in the three dimensional areas.

	<u>% Higher of Excellent</u>	<u>p value</u>
Empathy	17%	.19
Common sense	21%	.02*
Logical solutions	15%	.18
Self esteem	13%	.26
Personal competence	30%	.05*
Personal duty	17%	.07*

Because the sample size was fairly small, we can only pay attention with certainty to the following three dimensional differences between the good and poor performers.

Common sense is measured in a person's capacity to think extrinsically about the world, which is practical thinking clarity (the closer the score is to 6, the clearer the thinking). This indicates that the ability to see and understand things in a practical or comparative way is important in customer service. This means that the role requires that a person use his/her judgment and be able to make a decision that is practical, often overriding what is "permitted," or "within our procedures." This includes that person's being able to see what decisions would lead to good outcomes and what makes good business sense, while also being able to interact with clients about options that would fall outside of the "laws" of the company.

On the Clear Direction and Zero Risk HR reports, this means that how close a person's score is to 6 in Practical or Results Orientation Thinking correlates to how well the person will perform in customer service. So a group of 10 people with scores of 5,6 or 7 will outperform a group of 10 people with scores of 3, 4 and 8 in a customer service role.

Personal competence is a measure of the person's extrinsic bias about him/herself. When a person has a positive bias about his/her own extrinsic self, then s/he is predisposed to take charge, initiate solving problems and being the one who makes things happen, and wants to be seen as effective and capable. In customer service this could be interpreted as: "do what it takes to get the customer to believe that I am his best option to get his problem taken care of!" People with a lower bias in this dimension are typically more responsive than initiating, more inclined to be concerned about making a mistake, and often crippled from making a

decision outside the norm if they could be found guilty doing so.

On the Clear Direction and Zero Risk HR reports, this means that how high a person's score is in Outer Self or Self Assessment Thinking correlates to how well the person will perform in customer service. So a group of 10 people with scores of 6, 7, or 8 (limiting the range to 8 because of the high frequency of reactions required to generate a score of 9 and 10) will outperform a group of 10 people with scores of 3, 4 and 5 in a customer service role.

This particular thinking orientation was also confirmed to be a statistically significant differentiator in a study we did in 1993 for the Marriott Corporation on their nationally recognized customer service personnel. That particular study compared employees who had earned more than three Customer Service Stars (which were awarded when headquarters received on behalf of a customer service representative 5 unsolicited letters of commendation from customers) with a large group of new employees that the company had hired for customer service roles. The Marriott study confirmed that an employee's focus on looking good at a practical level (which is one of the motivations that accompany this thinking orientation) was critical for long-term success in a customer service role.

Personal duty is a person's bias about him/herself systemically. This score indicates that those who are better in customer service are internally driven to be responsible, and to fulfill their duties and commitments. This thinking

also is a source of internal control, providing the person with constraints and an ever-present value system that regulates and directs behaviors.

On the Clear Direction and Zero Risk HR reports, this means that how high a person's score is in Self Concept or Self Expectations Thinking correlates to how well the person will perform in customer service. So a group of 10 people with scores of 7, 8 or 9 (limiting the range to 9 because of the extremely high frequency of reactions required to generate a score of 10) will outperform a group of 10 people with scores of 3, 4 and 5 in a customer service role.

This study was conducted by Dr. Robert K. Smith and Virginia Harvey, Ph.D. and commissioned by James River Corporation in 1990.

Sales in a Professional Services Firm

A Big-Four accounting client asked us to evaluate their effective sales professionals in light of their effective consultants. We compiled and compared the profile scores of fifty successful sales and consulting professionals. Because the differences in scores were so dramatic, a number of statistically significant differences emerged. The findings from this study were consistent with every sales study we have done for professional service firms since 1988 (these are different differences than we see in general businesses because a person usually has to self promote to become a partner in a competitive, professional services firm – which is not often the case in management circles).

Significant differences:

*Sales people are not internally sensitive and therefore have thicker skin and are better able to recover from rejection or are not sensitive to people's feelings.

I2 < 4 or I1 > 7: 20% for sales and 55% of those in consulting

*Sales people are not as focused on making others feel good
I1-I2 > 2: 30% for sales and 52% of those in consulting

*Sales people are persistent but much less insistent and are more willing to quickly move on to the next prospect.

S2 > 8: 20% of sales people and 52% of the consultants (with those 20% having comparable E2 scores

for the sales people while the consultants' E2 scores were lower than their S2 scores)

* People who are unsure about their future direction are up and down in terms of self-motivation tend to avoid sales roles where self-initiative is required on a consistent basis.

S2 < 4: 0% of the sales people and 17% of the consultants.

In common parlance:

Sales people are better able to stay focused on the task of selling and

1. not get distracted by people's feelings
2. not bring a high priority of needing people to feel good throughout the meeting
3. not avoid situations where they might be rejected
4. are better able to brush themselves off and get back at it after having been rejected
5. are not needing to do things exactly right at the expense of getting things accomplished.

Sales in a Fitness Center Business

(how to double profits)

A national fitness center business engaged ZeroRisk HR to analyze their membership sales personnel to determine what criteria separated their top performers from their poor performers. Profile scores of approximately 165 employees were analyzed divided into four groups (by the management of the company):

The Zero Risk HR categories we deemed significant among top, median and poor performers are listed below. For those deemed significant that person received 2 cumulative points. For those scores deemed important, those person's received 1 cumulative point. All of each person's points were added and then that person ended up with a total cumulative number of points that were plotted on the following charts.

Significant scores (equal to 2 points on our cumulative scale)

- Low Empathy
- Low Self View
- Low Self Assessment

Important scores (equal to 1 point on our cumulative scale)

- Very High Empathy
- Very High Results Orientation
- Very High Adherence and Organization
- Low Adherence and Organization
- Low Self Expectations

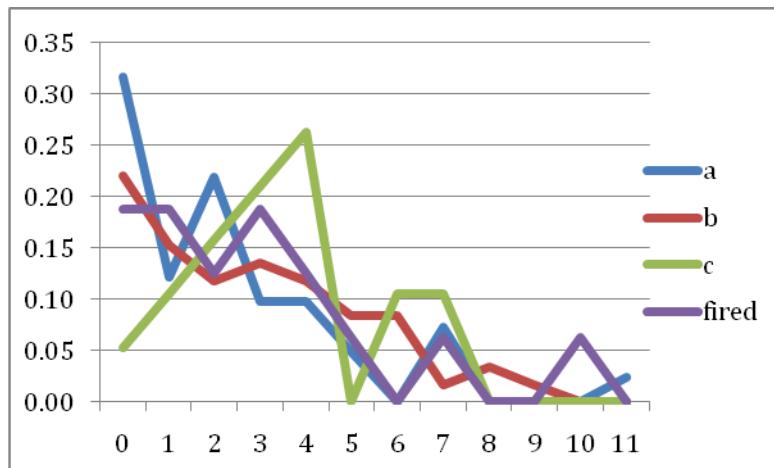
Self Expectation minus Self Assessment is a large gap

High Attention Balance

Adherence + Self Expectations is a high number
Self View + Self Assessment < Self Expectations

The client's managements' listings of employees: Group A is the top performing group, Group b is next highest, Group C is the lowest performing group and "Fired" are those fired prior to the compiling of this data

Percentages (y axis) of the four groups' cumulative scores (x axis)

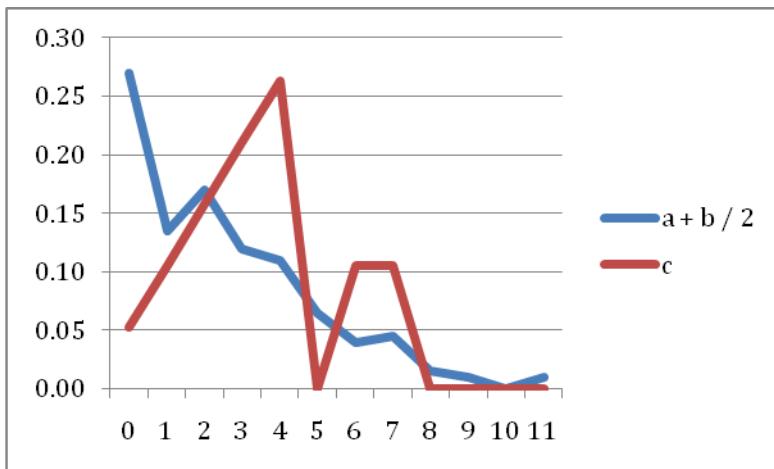


This chart shows that if the client hired only candidates that had cumulative scores below 3, they would hire in the following ratios:

66% of the present group A have scores below 3

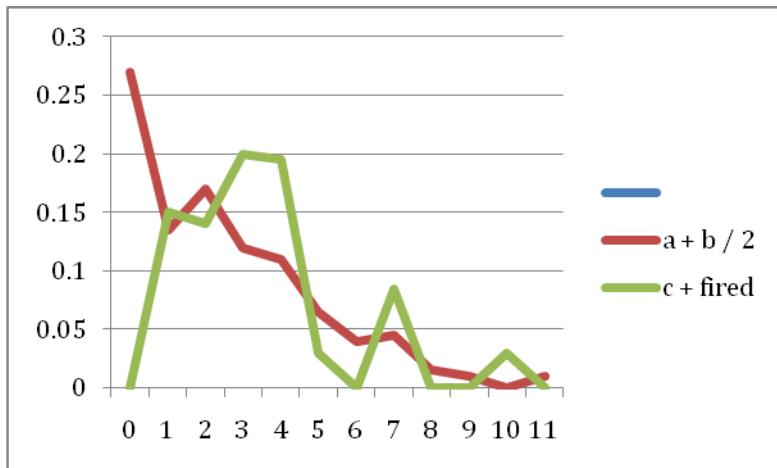
49% of the present Group B have scores below 3
32% of the present Group C have scores below 3
51% of those who were Fired have scores below 3

Comparison of Groups A and B compared to Group C
(percentage is y axis, scores are x axis)



This chart shows that if the client required that each candidate score below 3 (cumulative points), that they would hire 58% of those who fall into the A or B groups and would hire 31% of those in Group C (which means they would have 90% A's and B's and 10% C's, instead of the present ratio of 75% to 25%. This would obviously lead to significantly higher revenues (sales) and lower costs (turnover, insurance, legal, hiring costs) that could mean a **doubling of profits** (if their margins are in the 15% area).

Comparison of Groups A & B to Groups C and Fired Percentage (y axis) and Cumulative scores (x axis)



This chart shows that if the client required that each candidate score below 3 (cumulative points), that they would hire 58% of those who fall into the A or B groups and would hire 41% of those in Groups C and Fired.

You can see from the charts that there are significant differences in the Profile scores of those who are succeeding from those who are not succeeding at this client. That being said, we are unwilling to state conclusions based on some of the data because the scores of those who have been fired are consistent with scores of people who are successful in this company and dozens of other companies we have studied. There could be some significant “management failure” as a cause for some of those people being fired.

Management

Sara Lee Retail Stores Study

This management study compared managers who had succeeded with managers who had failed in the Sara Lee Corporation outlet stores. A sample of 150 managers of Sara Lee outlet stores was given the Hartman Value Profile in the fall of 1990. All participants had been identified as qualified for management and had been managers of their respective stores for fewer than two years. They were given the Hartman Value Profile as part of their ongoing management training and education.

Two years later, in the fall of 1992, the head of this division of Sara Lee divided the list of names from the sample into three groups (excellent, good, and failures). The criteria he used to distinguish the excellent managers from the good managers were: operations, sales, turnover, and ability to function within budget. At that time, Sara Lee had an annual management assessment program (completed by peers, subordinates and corporate management), which scored all managers on a numeric scale. These scores provided further distinctions by which the excellent managers (28) were distinguished from the good managers (79). Managers who were identified to be failures (43) had been removed or had quit from their positions prior to the fall of 1992. They had failed for various reasons ranging from an inability to effectively lead and manage people, an inability to effectively and efficiently oversee operations,

and an inability to plan and effectively execute those plans.

The results of this study are based on the differences between the excellent managers and failures. In this particular case, the unusual feature is that all participants (the excellent, good and failures) had been selected by management in 1990 as capable store managers. The profile scores that were compared are those from the testing completed prior to fall, 1990.

The final conclusions were reached by comparing the dimensional scores of the two groups. Previous management studies had shown that different personality types are able to function effectively in management roles. This was confirmed by this study, as well, in that the differences between the two groups were not those that manifest personality characteristics as much as they were those that manifest differences in functionality:

1. A better ability to work with and be patient with people
(Excellent were 18% more empathetic with an I1 valence of 54% positive vs. 54% negative),

On the Clear Direction and Zero Risk HR reports, this means that how high a person's score is in Empathy Thinking correlates to how well the person will perform as a manager of a retail store. So a group of 10 people with scores of 6, 7, or 8 (limiting the range to 8 because of the extremely high frequency of reactions required to generate a score of 9 or 10) will outperform a group of 10 people with scores of 3, 4 and 5 in a retail management role.

2. A greater tendency to trust others (than to be suspicious of their competencies)

(Excellent were 53% more inclined to delegate with an E1 valence of 28% vs. 43% positive),

On the Clear Direction and Zero Risk HR reports, this means that persons with a score of 5, 6 or 7 in Practical and Results Orientation Thinking will outperform a group of 10 people with scores of 2, 3, and 4 in a retail management role.

3. A greater tendency to be proactive (rather than reactive)

(Excellent were 18% more planning oriented with S1 Dim of 11 vs. 13),

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Structure or Adherence Thinking correlates to how well the person will perform as a manager of a retail store. So a group of 10 people with scores of 6, 7, or 8 will outperform a group of 10 people with scores of 3, 4 and 9 in a retail management role.

4. A greater level of personal courage (resulting in less defensiveness)

(Excellent had 42% healthier self-esteem with an I2 Valence of 25% vs. 16% positive),

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Inner Self or Self View

Thinking correlates to how well the person will perform as a manager of a retail store. So a group of 10 people with scores of 5, 6, or 7 will outperform a group of 10 people with scores of 2, 3, and 4 in a retail management role.

Dr. Robert K. Smith conducted this study in conjunction with the Sara Lee Corporation, 1990-92. All of the differences noted above are statistically significant with a $p < .05$.

Managers vs. Non Managers

A sample of 257 managers from eight different companies was given the Hartman Value Profile between 1988 and 1993. All participants were in management positions when they took the profile. They were given the Hartman Value Profile as part of their ongoing management development. This study compared those who had advanced into management positions with those who had not advanced into management positions.

The sample was divided into three groups: excellent managers, good managers, and poor managers. The criteria used to distinguish the excellent managers from the good managers were: superlative operations in their respective fields, effectiveness with their people, lack of turnover, and ability to function within budget. All were also assessed by their peers, subordinates and superiors who identified them as excellent (70), good (100), or poor (87). In order for a manager to be identified as poor, s/he had to have ongoing significant problems, ineffectiveness or failures within business contexts in which others were succeeding.

The results of this study are based on the differences between the excellent and poor managers. The final conclusions were reached by comparing the dimensional scores of these two groups. Previous management studies had shown that different personality types are able to function effectively in management roles. This was confirmed by this study, as well, in that the differences between the two groups were not those that manifest personality characteristics as much as they were those that manifest functional capability. The poor managers did not

score higher than the excellent managers in any dimension. The excellent managers were statistically superior to the poor managers in the following dimensions:

1. A better ability to work with and be patient with people
(Excellent were 26% more empathic with a I1 valence of 59% vs. 43% positive),

On the Clear Direction and Zero Risk HR reports, this means that how high a person's score is in Empathy Thinking correlates to how well the person will perform as a manager. So a group of 10 people with scores of 6, 7, or 8 (limiting the range to 8 because of the extremely high frequency of reactions required to generate a score of 9 or 10) will outperform a group of 10 people with scores of 3, 4 and 5 in a management role.

2. A greater tendency to work with others than do it herself
(Excellent were 25% more inclined to delegate with an E1 valence of 44% vs. 32% positive),

On the Clear Direction and Zero Risk HR reports, this means that persons with a score of 5, 6 or 7 in Practical and Results Orientation Thinking will outperform a group of 10 people with scores of 2, 3, and 4 in a management role.

3. Greater personal courage (resulting in less defensiveness)
(Excellent had 13% healthier self-esteem with I2 Dim of 11 vs. 13),

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Inner Self or Self View Thinking correlates to how well the person will perform as a manager. So a group of 10 people with scores of 4, 5, 6, or 7 will outperform a group of 10 people with scores of 2, 3, and 9 in a management role.

4. A greater degree of reasonability when confronted
(Excellent were 18% more reasonable and less stubborn than the poor managers were with an S2 dim of 12 vs. 14).

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Self Concept or Self Expectations Thinking correlates to how well the person will perform as a manager. So a group of 10 people with scores of 6, 7, or 8 will outperform a group of 10 people with scores of 3, 4 and 9 in a management role.

Dr. Robert K. Smith, 1993, conducted this study. All of the differences noted above are statistically significant with a $p < .05$.

Women in Management

This study also compared women who had advanced into management positions with women who had not advanced into management positions. 120 women in various businesses were given the Hartman Value Profile from 1987 to 1991 as part of their ongoing training and development. They came from more than 20 different companies in 6 different states. Their ages ranged from mid-twenties to the mid-fifties.

The sample was divided into two groups, those who were executives, currently serving in management roles in their companies (20), and those who were not in management roles (100). The results of this study are based on the differences between the managers and non-managers. The final conclusions were reached by comparing the dimensional scores of the two groups. This study confirmed that the differences between the two groups were dramatic and significant in four areas. The non-manager group did not score higher than the managers in any category.

1. A greater ability to make decisions and use common sense

(Managers were 23% clearer in their decision making and common sense judgment with a Dim E1 of 7.25 vs. 8.9),

On the Clear Direction and Zero Risk HR reports, this means that women with a score of 5, 6 or 7 in Practical and

Results Orientation Thinking will outperform a group of 10 women with scores of 2, 3, and 4 in a management role.

2. A greater personal courage (resulting in less defensiveness)

(Managers had 20% healthier self-esteem with an I2 Val. of 22% vs. 19% and Dim of 10.1 vs. 12.5),

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Inner Self or Self View Thinking correlates to how well the person will perform as a manager. So a group of 10 women with scores of 4, 5, 6, or 7 will outperform a group of 10 women with scores of 2, 3, and 9 in a management role.

3. A greater ability to make accurate self-assessments of their own strengths, limitations, and competencies.

(Managers were 12.5% clearer and more accurate assessing their own abilities and roles with a Dim E2 of 12.75 vs. 14.25),

On the Clear Direction and Zero Risk HR reports, this means that a woman's score in Outer Self or Self Assessment Thinking correlates to how well the woman will perform as a manager. So a group of 10 women with scores of 4, 5, 6, or 7 will outperform a group of 10 women with scores of 2, 3, and 9 in a management role.

4. A greater degree of personal freedom to make mistakes, risk loss, and accept counsel about one's own self.

(Managers were 13% more reasonable and less dogmatic than the non-managers were with a Dim S2 of 11.5 vs. 13.8).

On the Clear Direction and Zero Risk HR reports, this means that a person's score in Self Concept or Self Expectations Thinking correlates to how well the woman will perform as a manager. So a group of 10 women with scores of 6, 7, or 8 will outperform a group of 10 women with scores of 3, 4 and 9 in a management role.

Kinsel Enterprises, Inc conducted this study. (Dr. Robert K. Smith and Ken Bandy), 1996. All of the differences noted above are statistically significant with a $p < .05$.

A Caveat On Using Scoring Ranges

Because any individual member of a group can fall 2 standard deviations from the norm, it is a fallacy to predict that one specific member of a statistically significant group will outperform another member of a statistically proven lesser group. But it is accurate to conclude that a group of 10 persons who fall within the range of scores proven to be statistically significant for success in a particular function will outperform a group of 10 persons who do not fall within that range.

Effective Managers Scoring Ranges (USA)

Combining the Results of the Four Management Studies to Derive Statistically Significant Scoring Ranges for Management Effectiveness

Empathic Thinking 6, 7, 8

Able to read and empathize with individuals

Practical and Results Thinking 5, 6, 7

Has good judgment about practical choices and risks

Structured / Adherence Thinking 6, 7, 8

Is optimistic and able to consider alternatives about rules, order, plans, and logic

Inner Self / Self View Thinking 4, 5, 6, 7

Has a sense of who s/he is on the inside to the extent that s/he is not overly sensitive

Outer Self / Self Assessment Thinking 4, 5, 6, 7

Has a good ability to assess his/her skills, what s/he can do effectively, and how s/he functions in the world

Self Concept / Self Expectations Thinking 6, 7, 8

Has an optimistic and clear self understanding of one's own goals, principles, and expectations.

Property Managers

This study differs from the previous three management studies in that we looked at patterns created by multiple dimensions to find differences between successful and not-successful managers. For a commercial real estate client 32 property managers' Profile scores were categorized into two distinct groups: the top and bottom performers. The top group comprised 19 people, while the bottom group comprised 13. Only the Profile scores are being considered in this review, so experience, management oversight, individual working conditions, individual personal circumstances, education, and IQ are not included in this review.

How They Differ

Integrating All Three World Scores

38.5 % vs. 5.3%

A striking difference between the two groups is that 5 of the bottom performers (38.5%) had a positive world systemic and extrinsic orientation with an Empathy score below 7 while 1 of the top performers (5.3%) had this world thinking orientation.

Empathy Scores Alone
53.8% vs. 10.5%

A second significant difference between the two groups is found in the Intuition & Empathy orientation. 2 of the top performers (10.5%) had scores below 6, while 7 of the poor performers (53.8%) had scores below 6.

Correlating Empathy and Outer Self/Self Assessment Together

46.2% vs. 0%

A third difference lies in the combination of Self Assessment and Empathy thinking. 6 of the poor performers (46.2%) had a Self Assessment score greater than 6 with an Empathy score less than 6, while no top performers (0%) had this combination.

Overall Attention Balance Scores

38.5% vs. 15.8%

The final significant difference concerns the managers' self views in relation to their world views. This is what the Attention Balance score indicates. 3 of the top performers (15.8%) were outer directed (score of 3) while 5 (38.5%) of the bottom performers had that same orientation.

If These Scores Were Relied Upon

If we remove the bottom and top performers who fall into the above "high risk" categories, the result would

be the loss of 12 of the bottom performers (92.3%) and the loss of 5 of the top performers (26.3%). If the company employed this analysis, it would miss out on a quarter of the top performers in order to reduce the hiring of their poor performers by more than 90%.

Based on this population, if the company only considered the first three distinctions has their critical factors, they would cut their poor performing population by 9 (69.2%) and would only lose 2 of their top performers (10.5%).

What These Differences Mean

The first difference indicates that the poor performers had positive orientations concerning Structured (Adherence and Organization) and Practical (Results Orientation and Decisiveness) and did not have a balancing orientation concerning the individual nature of people (Intuition & Empathy). We have titled this world thinking orientation, "the Special Projects Specialist) because these people automatically gravitate toward individual tasks that have clearly defined beginnings and ends without a need to be attentive to the opinions, interests, and personalities of individuals with whom they work. In other words they are results focused without a compensating attention to the people-side of their role. This pattern has consistently proved to be a high-risk pattern for people in a management role.

The second difference indicates the same net effect, an inattention to the individual nature of the people with whom the manager is working but is much more specific. In this

case, the orientation about doing things right and getting things done is not the focus. Here the focus is on the person's unwillingness to give time or energy to listening and caring about what is important to others. The difference is subtle but important. In the above group, the focus is on getting things done and not having a compensating attention to others' individuality. In this difference the empathy score below 6 indicates that the manager has a negative aversion to giving time or attention to others' individualities. The former is the absence in the face of other priorities. This is the aversion concerning spending time or energy about these things. This thinking orientation is also consistently a risky orientation for people considering management roles.

The third difference concerns a person's confidence and desire to be accomplishing things, getting attention, or being seen as competent and in charge in comparison to the person's attention to the well-being of others. Again, we are dealing with the manager's need to be attentive to others and in this case the orientation is "fighting" with the person's own need for recognition and personal success. It makes sense that a manager who wants the glory more than s/he cares about the well being of others will have morale, turnover, customer service, and problems that result from pushing others away because of a need for control.

The final difference lies in the person's attention balance, which indicates the overall comparison of the manager's world thinking in comparison to the self thinking. A score of 3 indicates that the person is easily able to think about what others need and want while being unable to easily identify or think about what s/he needs, wants, or deserves. When people with this orientation are in stress-filled

situations, their "self-foundation" is shaky and they typically overreact (excessively anxious, dogmatic, defensive, sensitive, or avoiding of problems). In most cases the difference between good and poor managers only lies in how they function or don't function when in stress-filled situations or facing high stress problems.

The following chart summarizes the Clear Direction and Zero Risk scores derived from this study.

Scores that Indicate Potential Problems

Empathy < 6

All Three World Scores

Empathy < 6

Practical / Results > 6 and

Structured / Adherence > 6

Empathy and < 6 and
Outer Self/Self Assessment > 6

Attention Balance > 1.7

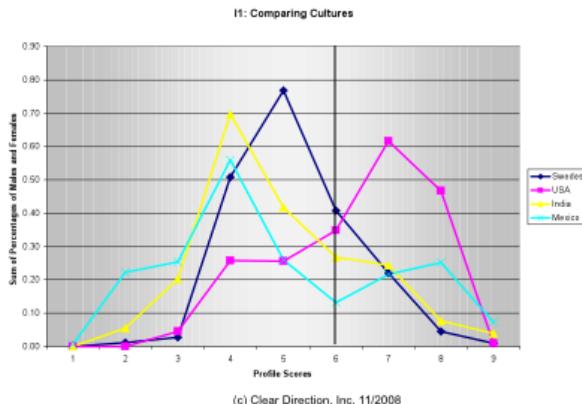
Culture and Sex

One of our observations was that the differences in cultures seemed to be significantly greater than differences between people of different sexes in the same culture. Once we had large enough samples of populations, we decided to analyze the data to see if our observations were accurate. Here is a review of our findings from comparing profiles of men and women working in the USA, Sweden, India, and Mexico. This data was gathered from studies done by Clear Direction, Pro4Pro (Sweden), ZeroRiskHR (Mexico), and Clear Value Vision (India) and were first presented by Dr. Nick Pothecary and me at the Academy of Value Sciences meeting in February 2010.

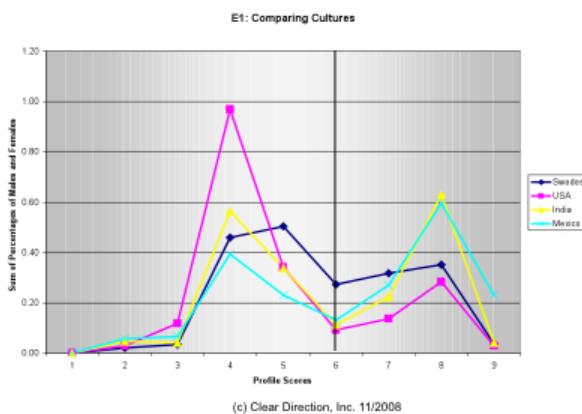
To display the charts for the differences between males and females would require 24 charts and because they all reveal the same conclusion, I will summarize what they reveal. All of the men of the respective cultures had the same scores as the women did in the same culture for each of the six thinking dimensions (at a statistically significant level). This alikeness was more than just having the same average for the sample, the alikeness was even at the level of the distributions of the individual scores for each dimension (1,2,3,.. 9). So any differences between how men and women of a particular culture think are not delineated by the six dimensional Profile scores.

Differences Among Cultures

I1: Empathy and Intuition

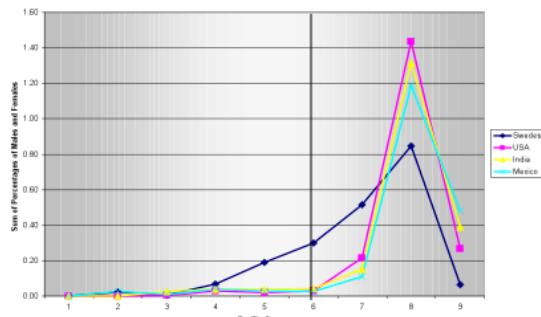


E1: Practical Thinking



S1: Structured Thinking

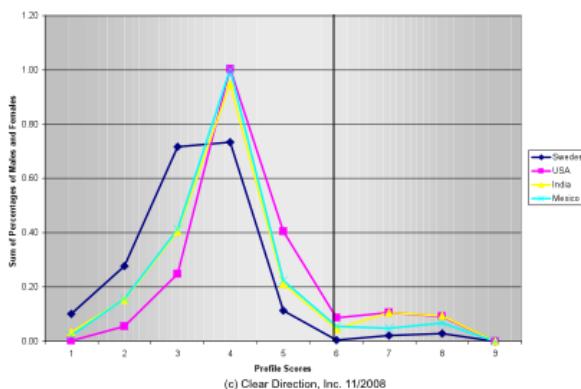
S1: Comparing Cultures



(c) Clear Direction, Inc. 11/2008

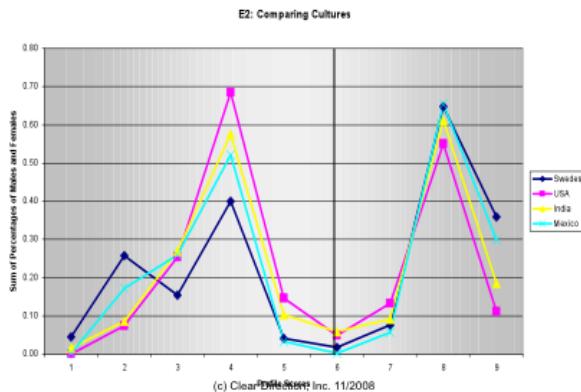
I2: Inner Self

I2: Comparing Cultures

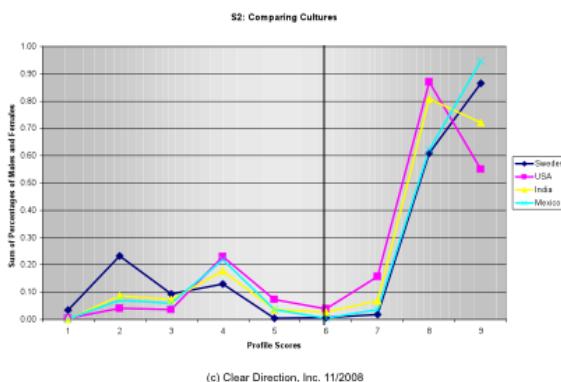


(c) Clear Direction, Inc. 11/2008

E2: Outer Self



S2: Self Concept



As the charts show the differences among people of different cultures are different at a statistically significant level (except the two systemic aspects where striking similarities exists among some cultures). To those who have worked in these different cultures, these findings are not a surprise – while they do demonstrate that particular traits that are generally associated to different cultures are measurable and important to consider when working with people of different cultures.

The implication of this point is to our making sure that cultural differences and sensitivities are attended to and not overlooked, while any emphasis (which is true in much of the US today) on paying more attention to people of one sex than another is not useful or appropriate.

Specific Studies

Predicting Management Success

Whereas the previous studies were comparisons of persons who had succeeded or had been promoted to management positions, this study was designed to determine whether we could predict whether a specific individual would be successful in a management role, before being placed in that role.

Because interview results are notoriously poor predictors of job performance with a validity coefficient of .14 (Dr. John Hunter, Michigan State University, 1988), we need some kind of reliable help in selecting persons to hire or promote into management positions. When it comes to hiring, this necessitates that interviewers utilize resources such as tests (high validity coefficient of .53 - Hunter) to help them accurately select the best candidate for a particular job. This study proves that the Kinsel-Hartman Value Profile is able to significantly reduce the risk and the negative effects of thinking biases that interviewers bring to the selection process and is able to predict whether a candidate is a high risk.

Between 1993 and 1996 the Kinsel-Hartman Profile was administered to 78 individuals seeking the opportunity to manage independently, franchised dry cleaning stores in communities throughout the United States ranging in size from 25,000 to 1,000,000 people. Of the 78 individuals, 49

were hired by the franchising company to store management/ownership positions. This analysis was conducted on the Kinsel-Hartman Profiles of the 49 individuals who were hired. The population is comprised of X% males and Y% females, of mixed race, age, and educational experience. Few of the members had prior experience in running dry cleaners.

The Profile was administered by handing the applicants the Profile and instructing them to follow the printed instructions. They were told that the results would be one facet of many different facets that the company used to put together an interview strategy. A third party supplier, Kinsel Enterprises, Inc. sole distributor of the Kinsel-Hartman Profile, provided the profiles and computer generated results of the candidates completed profiles. These results were shared with the company prior to the hiring decision and were used by the company to structure the next interview, to direct their reviews of the candidate's work history, and to facilitate questioning of references. The software also provided an analysis of risk: Low Risk, Moderate Risk, and High Risk, based on a selection of relevant criteria by Dr. Robert Smith of Kinsel Enterprises, Inc., that are described later. The results of the profile did not have direct or indirect effect on the performance of the persons because the candidates were not informed of their scores or the risk indicators nor were the hiring personnel involved in the oversight of the persons told what the risk levels were for the individual candidates.

The Dimension scores indicate a person's ability or capacity to value. In common parlance, this is a person's ability to focus using that particular kind of thinking. Valences

indicate an individual's propensity to move toward or away from the given properties. These are commonly known as biases or preferences. Balance Quotients reveal the individual's ability to and willingness to balance internal and external variables, issues, and concerns.

The data were analyzed both as raw data and as categorical data. For the later, each score was categorized as "no risk", "moderate risk", and "high risk" by the first author. Overall Risk scores were determined as follows: candidates with at least three scale scores in "high risk" categories were considered to be high Overall Risk. Candidates with at least one scale score in "high risk" and up to four scale scores in "moderate risk" categories were considered to be moderate Overall Risk. Candidates with fewer than four scale scores in the "moderate risk" and no more than one "high risk" score were considered to be low Overall Risk.

Successful employment was defined as employment in the management position within the company for at least 12 months. No distinctions were made as to why the manager did not continue on in his or her role. Some were fired because of criminal activity and others because of poor performance. Others resigned because for personal reasons, a desire to follow a different career path, or because of spouse transfers. All people who left were treated the same: as if they did not work out as a manager of an independently run dry cleaner. Although this makes the validation much more rigorous, from the perspective of the corporate office, these people were costly turnover regardless of their "reasons" for leaving. The information was gathered through the examination of the company records began three years after the study was begun.

Results by Overall Risk and Successful employment are shown in Table 1. After a period of 12 months, 35 of the original 49 individuals were still employed as managers with the company, that is, were "successful" hires. Of the five managers that had been identified as "high risk" hires, none were managers with the company a year after being hired (the analysis of the data was done using 3 high risk hires because the client had mistakenly excluded two management failures when the data was sent to Dr. Harvey). In marked contrast, 90% of those that had been "low risk" were successful and 65% of those that had been "moderate risk" were successful.

The standing of the managers on each of the scales was contrasted with their success using both raw and categorized data. The results are shown in Table 2. Of the individual scales, only "Sense of Future Direction" and "Getting Results" approach significance using raw data (raw numeric scores), while "Enjoys People" approaches significance using categorical data (categorization defined by Dr. Smith at the beginning of the project).

Conclusion from this study:

"Thus no individual scale stands alone (with high levels of reliability) in being able to predict future managerial success. However, the combined score of Overall Risk as determined by the Kinsel-Hartman Profile was found to be highly predictive

of successful employment, at the $p < .01$ level, using either raw or categorical data.”

Dr. Virginia Harvey, Ph.D.
University of Massachusetts Boston
Department of Counseling and School Psychology

In conducting studies such as this one, the question of managerial contamination arises. In most hiring situations, the variability of the work environment from one subject to the next becomes an important factor. Most people have personal experience with or observation of supervisors, bosses, coaches or teachers who have varied so much that they had a significant effect on the performance levels of those they supervised. This study is unique in this regard. The store managers were all autonomous except in accounting, advertising services, and construction. Corporate management did not provide management training or ongoing oversight of the managerial operations of any of the subjects (including hiring, conflict management, training, firing, customer service training, or motivation of employees). Every store received the same support as every other store. Personality differences and conflicts are not factors in this study because the home office focused on building and staffing new stores, not on operating ones that were already built. Because of this condition, managerial contamination can be rejected as a contributing factor in some successes or failures.

Table 1

Kinsel-Hartman Profile: Overall Risk and Successful Employment

Overall Risk Score	Not Hired	Hired	Not Successful	Successful	Percent Successful
Low	12	20	2	18	90%
Moderate	15	26	9	17	65%
High	3	3	3	0	0

All statistical analysis completed and conclusions concerning predictive confidences were reached by Dr. Virginia Harvey of the University of Massachusetts Boston.

The profile items were scored according to the method outlined in the Hartman Value Profile Interpretation Manual (Dr. Robert S. Hartman, 1973). The scoring used for the subject's reports yielded six dimensions (Reading People-DimI1, Practical Understanding-DimE1, Planning and Organizing-DimS1, Ability to Handle Rejection-DimI2, Practical Self-Knowledge-DimE2, Self Goals and Values-DimS2), five valences (Enjoys People-%+I1, Getting Results-%+E1, Conventionality Index-#Dis, Environment-%+S1, Competitive Self-%+E2, Sense of Future Direction-%+S2). Dimension and valence scores are combined to yield Stress Resistance (BQR1&2) and Team Orientation (Val.I1&I2) scores and the final Risk Analysis Score.

Specific Studies

Accountants vs. Financial Analysts

A Goldman Sachs' Archon Group study was conducted to provide the parameters of success for two different roles within the Archon Group. Prior to this study, there was much discussion and disagreement about the differences between accountants and financial analysts, with some executives arguing that accountants should be put in the track to become financial analysts. The purpose of this study was to determine whether the differences that some argued were present were measurable and were material in deciding how to compile career tracks for accountants.

The study population included 35 employees: 17 financial analysts and 18 accountants. While this sample is not large enough to provide statistical significance at levels below $p=.01$, the differences between and within the groups were definite, as were the similarities within the groups. The financial analyst and accountant groups were both divided into two: performers and non-performers. Their respective managers assigned the members of these groups based on their work experience with these people. While this methodology introduces significant levels of subjectivity, this type of comparison is appropriate because it is this same subjectivity that is present in the day-to-day workings of the company.

The instrument used to measure characteristics of the respondents was the Kinsel-Hartman Profile. It was

chosen because of the deductive nature of the science behind the Profile and the resulting objectivity, the precision and sensitivity of the Profile to distinguish differences in people, and the practical insight the results provide to human resources specialists for hiring and training within the Archon Group. The Profiles were distributed to the members of the study by three members of the Human Resources department of the Archon Group. The participants were asked to participate with an understanding that they would receive feedback concerning the findings of this study.

The Kinsel-Hartman Profile measures two significant aspects of the participants' thinking: their capacities to value and their biases in their orientations. Another way to describe these two characteristics is clarity of thinking and preferences in thinking. The Profile results distinguish the participant's thinking three different dimensions of value: intrinsic, extrinsic, and systemic value. These three dimensions are then distinguished further by noting how the person thinks in these ways in relation to the world, people, and things outside, and in relation to ones own self. For ease of understanding, the "world" dimensions are titled Intuition & Empathy (Intrinsic Value), Results Orientation and Decisiveness (Extrinsic Value), and Adherence and Organization (Systemic Value). A fourth score was added to the study, Types of Reasoning, because it distinguishes a person's quality of logic (conventional and analytical, intuitive, or unconventional and highly creative). The "self" dimensions are titled Self View (Intrinsic Value), Self Awareness (Extrinsic Self) and Self Expectations (Systemic Value). To this list was added a score, Attention

Balance that indicates the participant's overall balance between his/her world and self-orientations.

The Findings

The persons who conducted the study, while being very familiar and confident in the Kinsel-Hartman Profile, were surprised at the differences between the scores of the performers in the Accountant and Financial Analyst groups. It is often held that these two groups would require very similar skill sets and abilities, so the overseers of this study anticipated that the Profile scores of the performers in these two groups would overlap with no distinguishing differences. While they did overlap, distinguishing differences were detected. The differences are summarized below.

The performers (analysts, accountants, and executives) all displayed the following orientations:

- I. A high ability to read people with a generally balanced orientation towards others' feelings and uniqueness,
- II. An optimistic orientation toward rules, order, analytical concepts and processes,
- III. A self-deprecating attitude about their own unique self value,

IV. A strong need to strive to achieve one's own goals, meet personal expectations, and not be satisfied until they have met their own standards.

These areas of agreement are the foundation from which we can surmise characteristics about the Archon Group company culture in general. First, one could contend that the culture is one that is neither sympathetic (as are many family-owned companies) nor personally removed (as are many financial-services cultures). While the company's overall average is a little below the average of business people in general, it did not fall out of the range of being attentive to others' interests or able to understand the importance that personal feelings and opinions play in business. One could conclude from this score that the Archon Group will be a little too impersonal for very sympathetic, personally involving people while its people are able to empathize and understand the unique motivations of others.

Secondly, we can conclude that the Archon Group is an analytical culture. While this may seem to be an obvious conclusion, given the nature of the business, the scores also indicate that it is closer to being balanced in this regard than most companies. This proximity to balance indicates that the members of the Archon Group are clearer planners, reasoners, and analyzers than most people in business, and that they are better able to consider and understand change or analyze concepts, plans, or problems thoroughly.

Thirdly, we can conclude that the Archon Group is comprised of people who dismiss their own feelings and self-development for the sake of those things to which they commit themselves. While this is the classic orientation of strivers and high-achievers, the Archon Group scores indicate that their employees have more balance and clarity than most people in this regard. This difference indicates that the effective employees of the Archon Group have more accurate and healthier self-images. We can conclude that this clearer thinking concerning one's own self-expectations leads the Archon Group employees to be more flexible, better able to adjust to new situations, more inclined to learn new things about themselves, and less inclined toward personal dogmatism or stubbornness. This difference has also been observed in other studies as a key difference between top sales people and mediocre sales people. Like the top sales people, the Archon Group employees are persistent but not insistent.

The Accountant Group

The accountant performers are not distinguishable from the non-performers in their world orientations on the Profile. All of the accountants were within one score of each other for all four “world” thinking orientations. This is not a surprise, since all of the accountants passed through the same requirements in order to become accountants. Where the members of these two groups differed was in their “self” orientations. The non-performers’ scores indicated greater extremes: greater personal sensitivity to rejection, lower confidence, higher degrees of insistence, or

a heavy imbalance away from one's own unique self (feelings) and toward one's ideal self (personal expectations).

The facilitators of this study analyzed the results to determine benchmark ranges for the different thinking orientations of the different groups. The accountant benchmark ranges are as follows:

	Fits	Careful	Watch Out
Intuition & Empathy	5-7	4, 8	0-3, 9-10
Results Orientation / Decisiveness	4-5	6, 7	0-3, 8-10
Adherence & Organization	7-8	9	0-5, 10
Types of Reasoning	A,C,D	F	All others
Self View	5	4, 6-7	0-3, 8-10
Self Awareness	4-5	3, 6-7	0-2, 8-10
Self Expectations	7-8	6, 9	0-5, 10
Attention Balance	1, 1.7	.7	.3, 3

In understanding human behavior and success, it is important to remember that one particular weakness in a person's thinking does not usually lead to failure. It is also true that a weakness in a specific dimension is usually compensated for by a strength in another area. Therefore when analyzing Profile scores or a person's thinking, it is important to take the entire thinking orientation into account. A simple, yet reliable, way to do this is to assign points for being outside the ranges of successful people. When the sum of the points reaches a certain threshold, then the person most likely has too many variant thinking orientations to succeed.

In order to arrive at a composite score for each candidate, a number was assigned for all scores falling within the “Careful” and “Watch Out” ranges. For every score in the “Careful” range, the person received 1 point. For every score in the “Watch Out” range, the person received 3 points (these valuations were chosen because the “Careful” scores border the “low risk” scores, while a “Watch Out” score indicates a significant variance from the thinking orientations of successful performers). The “performers” total point average was 3 points while the “non-performers” averaged 5 points each. Not only were the averages different, but also all “non-performers” had scores above 3, while no “performer” had a sum higher than 7.

For the purposes of using the Kinsel-Hartman Profiles in helping assess accounting candidates, the sums were grouped into the following three categories:

Points Sum	Conclusion
0-3	Most likely will be a success in that role
4-7	Look carefully at this candidate, about a 50-50 likelihood of success.
>7	Be very cautious about hiring this person since all with this sum were identified as non-performers.

The Financial Analyst Group

Unlike the accountants, a sub-set of the financial analysts were distinguishable in their world orientations.

While most of the analysts were within one score of each other for all four “world” thinking orientations, half of the non-performers had stronger skepticism and lower abilities to think practically, politically, or tactically than all of the performers. While this orientation was evident in almost half of the accountant performers, it was not present in the analyst performer group. This leads us to believe that the axiological difference between accounting and finance is evident when comparing the thinking orientations of the performers with the non-performers and with the analysts and the accountants.

Axiology distinguishes extrinsic value and systemic value. Extrinsic value (results orientation and decisiveness) is the world of doing business: making decisions, spending money, people in groups, etc. Systemic value (adherence & organization) is the world of rules, order, systems, and compliance. When looking at the applications of money through these two value filters, one can readily see that the extrinsic application of money is finance (how people spend it, trends, markets, randomness, unpredictability, etc.), while the systemic application of money is accounting (rules, conventions, credits and debits in the “right” places, double entries, etc.). In the case of the Archon Group sample of financial analysts, no “performers” were foggy in their extrinsic thinking (finance), while many accountant “performers” were foggy in their extrinsic thinking. So a person is able to be a successful accountant without a clear ability to think about the applications and relative uses of money, while no such person was successful as a financial analyst.

Where the members of these two groups differed in their “self” orientations was also in the extrinsic dimension (self-awareness). The non-performers’ scores indicated less clarity in this dimension. This indicates lower confidence or personal ability to contend for one’s usefulness in the face of opposition, competition, or being questioned. In other words, the performers of the analyst group were (for the most part) confident and aware of their own competence.

The analyst benchmark ranges are as follows:

	Fits	Careful	Watch Out
Intuition & Empathy	6-7	5	0-4, 8-10
Results Orientation / Decisiveness	6-7	5, 8	0-4, 9-10
Adherence & Organization	8	6, 7	0-5, 9-10
Types of Reasoning	A,C,D,F	G,I	All others
Self View	4-5	3	0-2, 6-10
Self Awareness	5-7	3, 4	0-2, 8-10
Self Expectations	6-8	9	0-5, 10
Attention Balance	.7 - 1.7		.3, 3

Again, in order to arrive at a composite score for each candidate, a number was assigned for all scores falling within the “Careful” and “Watch Out” ranges. For every score in the “Careful” range, the person received 1 point. For every score in the “Watch Out” range, the person received 3 points. The “performers” averaged 2 points each while the “non-performers” averaged 6 points each. Not only were the averages different, but all “non-performers” had scores above 3, while no “performer” had a sum higher than 6.

For the purposes of using the Kinsel-Hartman Profiles in helping assess financial analyst candidates, the sums were grouped exactly the same as the groups for the accountants:

Sum	Conclusion
0-3	Most likely will be a success in that role
4-7	Look carefully at this candidate, about a 20% likelihood of success.
>7	Be very cautious about hiring this person since all with this sum were identified as non-performers.

Two Other Orientations

While the above materials show that it is not appropriate to focus on any particular thinking orientation as a problem, two different problematic orientations appeared from this study and make sense in light of the Archon Group's culture and business. The first is a negative orientation toward systemic value in the world (adherence and organization score below a 5). This indicates that the person has natural and continual skepticism about rules, order, structure, compliance, and the absolute nature of formal constructs. One person at the Archon Group with this orientation was profiled, was identified as a non-performer, and recently resigned from the company.

The second orientation is not one aspect alone but rather is a measure of the difference between the world extrinsic and systemic orientations. When a person has a

strong orientation toward systemic value (adherence and organization) and a strong reaction against extrinsic value (results orientation and decisiveness), the difference between the two can result in problematic behavior. Only one manager had this great of a difference between these two orientations and resigned within a year of coming to the company. One could postulate from this interpretation and example that when the numeric difference between the Results Orientation and the Adherence scores is greater than 3, then the person's ability to function effectively as a manager ought to be investigated very thoroughly.

Conclusion

This study has provided a benchmark from which the Archon Group can more accurately interview and decide on candidates for accounting and financial analyst positions. While it would be both ill advised and illegal to use these scoring ranges as determiners of a candidate's riskiness, they do provide a reasonable and logical framework from which an interviewer can intelligently direct his/her review of a candidate for a management, accountant, or financial analyst position.

Accountants are clearer thinkers in the area of logic, adherence, organization, and rules than are financial analysts. Financial analysts are better able to be effective with people on an individual, motivational level, and are more aware of attentive to business and people in political or decision-making roles.

Specific Studies

Lost Time Injury Study

The goal of this study is to determine whether the aspects of thinking that the Kinsel Hartman Profile measures can enable us to distinguish between people who are accident prone from those who are not accident prone, provide a means to identify accident prone people based on their thinking methodologies, and provide the construction industry effective hiring and training strategies that will reduce the occurrence of lost time injuries.

The Study

The study included 54 participants, 25 of whom had perfect safety records and 33 who had lost time injuries while on the job. The participants come from nine different large construction companies, principally in the commercial building and highway construction industries, covering the continental United States.

Each of the participants was asked to participate in the study and did so voluntarily. Approximately 15% participated anonymously by putting a code rather than their own names on the Profile questionnaire. Each person was given a Kinsel-Hartman Profile (KHP) to fill out. The KHP is a set of four paper and pencil tasks whereby the participant ranks eighteen different statements from best to

worst. The Profile forms were submitted to ZeroRiskHR, a division of the International Risk Management Institute, where they were processed. Processing consists of entering the participant's rankings into a software package that analyzes the responses and then generates specific scores. Dr. Robert Kinsel Smith, based on Dr. Robert S. Hartman's work in formal axiology, developed this software. The generated scores were then entered into two different tables: one for the safe workers and one of the lost time injury workers. These tables of scores were then sent to Dr. Robert Kinsel Smith for analysis and summarization.

Hypothesis

Based on thirteen years of applying the Kinsel-Hartman Profile to business applications, I conjectured what thinking orientations would show up to be consistent with lost-time injuries. The first area that I thought would have some significant differences between safe and unsafe workers was the dimension of Practical Thinking. I thought that accident proneness would correlate to a strong inattentiveness to Practical and Decisiveness thinking. This dimension is that of seeing things and people as they are in the practical, functioning world. This is seeing how one thing leads to another, how things change, and how things actually work. If a person has a strong inattention to these aspects, then s/he will not be aware of how things change, how one action can lead to another action or reaction, and how timing, energy, and momentum play a part in outcomes. So scores of 2 & 3 are expected to be problematic, as it applies to people being safe in a dangerous construction environment.

The second thinking orientation that I anticipated would be directly associated with lost-time injuries was a strong inattention to adherence and Organization. This dimension is the one of rules, policies, and standards imposed by others on a person. When a person has a score of 2-4, that person reacts emotionally to being told what to do or how to do it. This orientation is expected to lead to accidents because the person would have an inner aversion to safety policies, procedures, conventional wisdom, and doing things in a safe-routine manner.

The third orientation that I expected to be consistent with lost-time accidents also concerned the Adherence & Organization perspective, but on the opposite end of the scale. I expected to find that a fixation on this dimension would correlate to injuries. While a fixation will cause a person to blindly follow rules and policies, it can also cause a person to think about how they think things should be instead of being able to see how they are. So a person who is fixated on his/her idea about how something should be done or how safe a particular activity will be, can actually be blinded by this concept and thereby miss what actually is. A score of 9 or 10 was expected to be associated with the lost-time injured subjects.

The final thinking orientation that I expected to be different between the two groups concerns the Self Awareness. This orientation indicates the persons' attention to their physical bodies, awareness of how their actions affect the world around them, and awareness of how their own actions lead to the outcomes they experience. I conjectured that the injured workers would be less aware of this aspect of themselves, either too much so or not enough.

Findings

This first chart lists the two groups' ranges of scores for the three dimensions in the world and self frames of reference.

	Ranges of Safe Workers	Ranges of Injured Workers
World Orientation		
Intuition and Empathy	2-8	2-8
Practical and Decisiveness	3-9	2-9
Adherence & Organization	5-9	3-9
Self Orientation		
Self View	1-7	1-5
Self Awareness	1-9	1-9
Self Expectations	2-9	2-9

This chart indicates that two of the conjectures were accurate. One could surmise that some risk can be associated with people who score a 2 on Practical and Decisiveness thinking or a 3 or 4 on Adherence and Organization thinking. A score of 2 indicates that the person is essentially blind to how people and things work and inner-relate to one another in the practical, real world. A score of two for the Practical and Decisiveness dimension indicates that the person does not see how one thing leads to another, how things change, and how things actually work in the practical/real world.

The second group of scores: 3 & 4 on Adherence and Organization, indicate a rebellious disposition. As stated above, to get these scores a person has to have a strong aversion to rules, order, standards, or policies imposed by others. So these people have a reaction against “adherence” to standards, rules, or policies.

The only orientation that was anticipated that is not distinguished by the participants’ profile scores was the over attentiveness to Adherence and Organization. Either the strict adherence keeps the people safe or the study population was too small (since no one scored 10 on this dimension).

Conclusion: Risk can be associated with the following scores

Practical Thinking and Decisiveness 0 - 2

Adherence and Organization 0 - 4

The second analysis of the scores addressed the averages of the groups. The rule of thumb for interpreting the scores, is the closer to 6, the clearer the thinking: the better judgment. While I hoped that the average scores would be significantly different and thereby provide distinctions between the two groups, I conjectured that they would likely not show much difference because the extreme scores would average out each other.

The following chart lists the average dimensional scores for the two groups.

	Safe Workers' Average	Injured Workers' Average
World Orientation		
Intuition and Empathy	5.2	5.6
Decisiveness and Practical	5.9	6.2
Adherence and Organization	7.7	7.5
Self Orientation		
Self View	3.6	3.3
Self Awareness	5.5	5.3
Self Expectations	7	6.67

Conclusion: The averaging of the scores indicates slight differences but does not demonstrate any statistically significant differences between the groups.

From the results listed in the second chart, I would have to assume that the populations of the two groups brought seeming balance when we did averaging. If a difference really did exist, and it was not apparent by averaging then it would be revealed in an analysis of the variances of the scores. This analysis can reveal differences that hide in averaging because the differences are squared prior to being summed. So in variance analysis, when a lot

of differences exist on both sides of the middle, those differences appear (whereas those same differences do not appear in averaging). The following charts display variances.

In this third chart, I compared different variances of the differences between the respondents' scores and the score of 6. A score of 6 represents answers of balance and low-variability. I compared the variance of all of the world and self dimension scores and summed the differences. I also compared the variances of the Adherence & Organization along with the Decisiveness & Practical Thinking. These indicate whether the respondents' answers were varied in a way that the averages would not indicate (the average scores are on the chart in (parens)).

WORLD ORIENTATIONS

	Safe Workers' Variance	Injured Workers' Variance
All Three World Orientations	9.4 (4.6)	10.2 (4.67)
Average of the Variances to 6:		
Empathy	3.2	3.2
Decisiveness	2.8	3
Adherence	3.4	4
Decisiveness and Adherence	6.2 (2)	7 (2)

SELF ORIENTATIONS

All Three Self Orientations	19.8	35.1
Average of the Variances to 6		
Self View	7.3	10.4
Self Awareness	6.5	8.2
Self Expectations	6	6.5
Awareness and Expectations	13.8	18.6

Conclusions:

1. The differences already noted in the world orientations (chart 1) are seen in the world orientation variance analysis. Clearly, the lost time injured people do have a greater disagreement in their brains between how things are and how they think about them (their heads are more in the clouds). This is seen in the Adherence scores of 3.4 (safe workers') vs. 4 (injured workers'). A difference of .6 for a score range from 3.4 to 4 is significant (being > 18% of the former score).
2. The differences between how safe workers think about themselves in comparison to how injured workers think about themselves is dramatic. The major differences are seen in the Self View and Self Awareness scores. These differences of variance, 3.1 and 1.7 respectively, are very significant (42% and 26% of safe workers' scores). The Self View scores indicate that the injured workers are less aware of their own

human, unique worth (and are therefore less accurate in accessing their own feelings, abilities to react or withstand stress, or resilience to pressure or rejection). The Self Awareness score indicates the injured workers are less aware of their physical bodies, aware of how their actions affect the world around them, and are less aware of how their own actions lead to the outcomes they experience.

Further analysis of scores: Given the significant differences in the variances, I looked at the frequency of the extreme self scores. The following chart indicates those differences.

	Safe Workers	Injured Workers
Self View	16% score < 3	39% score < 3
Self Awareness	16 % score < 3	24% score <3
	12% score > 8	15% score > 8
Self Expectations	16% score < 5	27% score < 5

*Conclusions: Some risk appears to be associated with
Self View scores below 3,
the Self Awareness scores below 3, and
Self Expectations scores below a 5.*

Summary

Because this study was not designed to be a predictive study, absolute assignment of risk to different scores is both impossible and illegal. In order to use an instrument's

scores in that manner, a predictive study will have to be done, where the participants are tested when they are first hired, placed in a category of risk based on their test scores and then have those scores evaluated for accuracy after an extended period of time.

This study does provide guidance in the following ways:

The following orientations are likely to be at risk and when being considered for hire, the company should do a careful background check into the person's safety record and should be careful to train the person carefully regarding safety procedures.

1. Persons with low Decisiveness and Practical Thinking scores (<2)
2. Persons with low Adherence and Organization scores (<5)
3. Persons with low Self View scores (< 3)
4. Persons with low Self Awareness scores (< 3)
5. Persons with low Self Expectations scores (< 5)

Training and job assigning ought to be done with extra precautions as it applies to people with the above thinking orientations. These cautions can apply to how people get assigned to danger-filled roles, how much supervision a person requires before being given sole responsibility for a particular job, or how strict the requirements are enforced before a person is allowed to work a particular type of machinery.

Appendix

The Kinsel Hartman Profile

Based on the deductive science of formal axiology, the KHP provides a mathematical model of the structure of a person's decision process, called the person's structure of value. Having a person complete the profile applies to the tasks required in business because a value profile is a task where the person prioritizes 18 statements (value combinations) from best to worst. This is exactly what everyone does in the workplace; they consider many different options and then decide what is the best thing to do. So the output of a value profile always pertains to work functions, even for people who have a strict boss who tells them everything they are to do (because that employee must decide whether he is going to obey or do something other than what his boss tells him to do).

The principle elements of the science include three different dimensions of value, which are the different ways a person can know something, and the person's two different frames of reference, his/her orientation toward the world and other people and his/her orientation concerning his/her own self. The key components of this structure include the person's biases toward or away from each of the different dimensions of value and the person's capacities to think clearly about each of the different dimensions of value. The key outcome of the Profile is eight different scores. Six of the scores are blended scores of the bias and capacity for each of the dimensions in each of the frames of reference.

The seventh score is a qualitative analysis of the type of logic the person employs where thinking about rules, order, and structure. The eighth score is an overall balance indicator, derived by comparing the person's world orientation with his/her self orientation. These eight scores provide a mathematical model of the person's value structure from which the person develops perceptions, makes decisions, and exercises judgment.

Many studies have been completed previously using the Kinsel Hartman Profile. One such study, a predictive validation study, proved that individuals who have a problematic thinking orientation can and do succeed by using compensatory thinking strengths that neutralize the effects of their problematic thinking. This study also proved that when a person has a combination of problematic thinking orientations, they are unable to sustain success-producing behaviors on a day-in and day-out basis. In other words, people can be and usually are successful with one thinking weakness, while they usually are not successful when they have more than one thinking weakness (here a thinking "weakness" is defined to be a thinking orientation that consistently causes the person to reach conclusions that are inaccurate, either about the world or about one's self).

The Kinsel-Hartman Profile measures two different aspects of a person's thinking concerning each of the six value dimensions. These are capacities to value and biases for or against that dimension. A person's capacity to value can be likened to the resolution of the image the brain forms concerning that dimension of value. When the resolution is high, precise or sharp, then the person's ability to perceive and make judgments is high. When the resolution or

capacity to value is low, then that person has a difficult time being precise or forming definitive judgments in that value dimension. A high capacity enables the person to be able to “see” pertinent input in that value dimension, process that input along with other data in that dimension, and form a judgment in light of the new data. Capacities are that which determine a person’s ability to be reasonable (high capacity) or propensity to rationalize (low capacity). A person’s bias for or against a particular value dimension is his/her negative or positive orientation concerning things in that particular dimension. Biases are the indication of the degree and direction of skewing the person experiences in each value dimension.

Both the capacity and the bias affect a person’s choices, decisions, and behavior. I blend these two scores into one score because it is the combination of the capacity and bias that serve as the basis for a person’s making a decision or taking an action. By blending these two into one, then simple and effective comparisons of the different value dimension scores can be made.

The scores are a combination of a person’s bias and capacity for each of the respective dimensions. Because there are three dimensions and two frames of reference, six principle scores are evaluated. The score scale is 0-10. A score of 6 represents the peak score, where the person’s bias is well balanced and the capacity is very high. As the score moves away from the score of 6, the scale indicates a reduced capacity to value (fuzzier thinking leading to greater variability and tendency to react). When the score is lower than a 6, the negative or ignoring bias is being indicated. When the score is above a 6, the person’s positive

bias or attentiveness to that dimension is being indicated.

The Three Dimensions

The Kinsel-Hartman Profile is based on formal axiology, the science of value. In the science, three dimensions of value (ways that people can understand things) exist. They are systemic, extrinsic and intrinsic value. Systemic value is the dimension of formal constructs; the ideas of how things should be. This dimension is one of definitions or ideas, goals, structured thinking, policies, procedures, rules, and laws. If a person values someone or an object systemically, then that person or object has to fulfill the idea perfectly. There is no middle ground for partial fulfillment in systemic value. The concept is either perfectly fulfilled or not fulfilled at all. Thus, systemic dimension is a very limited dimension. The mathematical properties of this dimension are finite sets and finite elements, i.e., there are a limited number of choices and a limited number of properties for the particular object in question. Too much attention to this dimension results in behavior that is too focused on doing things by the book, a preoccupation with planning and having things done perfectly, a tendency to measure everything and everyone against a preset idea of how they should be, and an inability to be comfortable with changes, unpredictable opportunities, and surprises. When a person ignores this dimension, the resulting behavior is an unwillingness to submit to policies and rules imposed from the outside, a skepticism about the value of spending time and money planning for the future, an inability to hold others to standards and literal agreements, an impatience

with processes, and an uneasiness when systems are in place and running smoothly.

Extrinsic value is the dimension of abstracting properties and then comparing things to each other. This is the dimension of comparisons, relative and practical thinking. It includes the elements of the real, material world, comparisons of good/better/best, and seeing things as they compare with other things. This is the dimension of seeing things and their properties as they apply to practical situations. To value a person extrinsically is to compare that person in relation to other persons. This dimension is one of results and common sense thinking, tactical planning, role satisfaction and social fulfillment. This is the primary dimension of business. Mathematically, this dimension includes infinite possibilities that can be distinguished from each other (denumerably infinite sets). However, for each comparison a limited number of characteristics apply (a finite number of elements or properties). When a person is too attentive to extrinsic value, the resulting behavior will be an overemphasis on getting things done now, a tendency to see other people as practical and political commodities, and a need for things to be changing constantly, getting visible results, and moving forward. When a person does not pay enough attention to extrinsic value, the resulting behavior will be a tendency to avoid unpredictable situations, a discounting of the energy and effort required to get something accomplished, and an avoidance of the fulfilling of social norms and values. These people do not like political dynamics, relative comparisons, or risk.

Intrinsic value is the dimension of uniqueness and singularity. Intrinsic value is the valuing of an object or person with an eye toward its singularity, uniqueness, essence, or spiritual being. When describing or valuing persons or objects in this dimension, one becomes personally involved with the object/person. There is a self-giving to the object/person which is not present in valuing extrinsically or systemically. The object/person is being valued and recognized as irreplaceable because it is seen as unique. Intrinsic valuing is the act of personally relating, empathizing, sympathizing, or intuitively feeling. It is a focus on the wholeness of the person or thing. Mathematically, this dimension includes infinite properties that cannot be separated from each other. The mathematics of the intrinsic value is one of non-denumerably infinite sets with infinite elements (unlimited possibilities that cannot be individually identified with an unlimited number of elements concerning the person or object in question). This dimension is the richest of the three in its properties. When a person pays too much attention to intrinsic value, he will be overly attentive to the good in others, have a tendency to avoid putting others in uncomfortable positions, and sense a need to have his feelings satisfied in order for a decision to be a good decision. When a person pays too little attention to intrinsic value, the resulting behavior will be suspicion of the intentions of others, a tendency to see others functionally or as part of a system (instead of treating people as unique individuals), and a distant, protected or cold behavior when relating to others one-on-one.

Each of the dimensions applies to both a world perspective and a self-perspective. Therefore, six major aspects of a person's thinking exist, three about the worldview and three about the self-view. The Hartman Profile measures two

different aspects of a person's thinking concerning each of the six value dimensions.

Scores

The profile identifies two aspects of a person's thinking for each of the dimensions concerning how the person thinks about the world and others and how the person thinks about himself. So there are six general categories of thinking to which each is assigned two numeric scores (one for the person's capacity or clarity of value and the second indicating the person's degree of positive bias toward that particular dimension of value). These two scores are then combined into a single score that reflects both aspects ranging from one to ten. This blending convention was chosen because of the difficulty people had understanding how a person's capacity could be high with a negative bias in one dimension while that same person's capacity could be low with a positive bias in another dimension (since we commonly understand high to be correlated to positive and low to be correlated with negative). By blending the two scores into a single score, the incidences of confusion were reduced, so those scores are what were used in the studies in this report (except the WH Cleaners, predictive study).

The numeric scores reflect the following characteristics:

Score	Bias	Clarity
1	strongly negative	Blind
2	strongly negative	Blind
3	negative to strongly negative	Unclear

4	negative	Fuzzy
5	cautious	Extremely Clear
6	neutral	Extremely Clear
7	optimistic	Extremely Clear
8	positive	Fuzzy
9	strongly positive	Unclear
10	strongly positive	Blind

One general observation about success is that a person's clarity of thinking has more to do with success than one's biases (clarity of thinking is only measured by value profiles, and is not able to be derived from psychological, personality or temperament tests). Biases have more to do with whether a person gains or loses energy dealing with specific properties. So personality and temperament tests (which measure bias) but do not measure clarity are helpful only in identifying whether a person can naturally fulfill certain roles (in terms of energy fits for doing the tasks) which a values instrument provides both the information applied to biases and applied to being able to function effectively with clear judgment under stress and on a regular basis (which is what is needed for success).