

The Science of Leadership

THE PROOF THAT TRANSFORMATIONAL LEADERSHIP WORKS

by

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EXECUTIVE SUMMARY

Evidence from hundreds of studies including at least four meta-analytical studies and a global research effort involving over 170 researchers and over 15,000 managers in more than 60 cultures provide very strong proof that effective leaders engage in five specific behaviors:

Idealized Influence--Effective leaders are charismatic—They exude confidence and competence. They appear to have a clear sense of mission, purpose, and values and behave in ways that are consistent with their purpose and values. We respect them for their commitment to achieving an important goal and for their willingness to make personal sacrifices to achieve that goal. We take pride in being associated with them.

Inspirational Motivation--Effective leaders are inspirational—They develop and articulate a clear and compelling vision of the future. We find their enthusiasm for their vision and optimism that it can be achieved exhilarating.

Individualized Consideration--Effective leaders are considerate—They deal with people as individuals with unique needs, abilities, and aspirations. We are attracted to them because we sense that they understand us and will coach, advise and teach us.

Intellectual Stimulation--Effective leaders are stimulating—They question assumptions and the status quo. They seek innovative and creative solutions to old problems and encourage us to do the same. When we are around them we feel excitement for finding new perspectives and new ways of doing things.

Contingent Reward--Effective leaders reward accomplishment—They make their expectations clear and reward performance. We know where we stand with them and that we will be rewarded if we meet or exceed their expectations.

The results of studies such as the following provide substantial proof of the potency of transformational leadership plus contingent reward:

- Researchers from the University of Pittsburgh and Emory University studied the performance of 250 U.S. Chief Executive Officers. They found a significant and positive relationship between the CEO's display of charisma (idealized influence) and their firm's performance in increased sales,

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- changes in market share, increased earnings and return on investment compared to their firm's competitors.¹
- Researchers asked social workers in 26 hospitals in a large U.S. city to evaluate the leadership style of their immediate supervisors using Bass's Multifactor Leadership Questionnaire. The supervisors' ratings on transformational leadership were strongly related to the social workers' job satisfaction, perception of leader effectiveness, and willingness to exert effort and to perform beyond expectations.²
 - Researchers in the Netherlands examined the effect of different leadership styles on measures of financial and organizational performance in 50 supermarkets within a large supermarket chain. They found that stores whose managers adopted a transformational leadership style performed significantly better on net profit, controllable costs, general communication, organization efficiency, and innovation than did stores with managers using other leadership styles.³
 - Researchers compared the performance of cadets in basic training in the Israel Defense Forces (IDF). Cadets assigned to platoon leaders who had received training in transformational leadership outperformed cadets assigned to platoon leaders who had received more traditional leadership training in every performance area measured. Additionally, platoon leaders trained in transformational leadership had a positive impact on their direct followers' motivation to perform beyond expectations, commitment to the organization's values as expressed in the IDF Code of Ethical Conduct and critical thinking skills.⁴
 - Researchers studying the leadership styles of female sales managers in a sample of U.S. companies found that sales managers who used a transformational leadership style and who provide contingent rewards to their followers obtained higher subordinate commitment and performance. Additionally, the transformational sales managers were rated by their subordinates as being more effective than other managers in meeting subordinate, unit and organizational needs.⁵
 - Researchers studied the impact of supervisor leadership styles on the learning orientation of a sample of public accountants in the United Kingdom. Accountants whose supervisors exhibited a transformational leadership style were more likely to exhibit a high learning orientation than accountants who worked for supervisors who practiced the transactional style of management by exception (positive or negative). Accountants exhibiting a learning orientation were more concerned with increasing their competence than simple getting a good performance evaluation from their supervisor. They exhibited an intrinsic interest in their work; chose challenging tasks that provided learning opportunities; treated mistakes as part of the learning process; attributed success or failure to the level of effort expended; and, held the implicit belief that they could expand, change, and develop their personal qualities and abilities if they chose to do so. The researchers concluded that companies wishing to become learning organizations would be wise to have their managers and supervisors practice transformational leadership.⁶
 - In a laboratory study of college students engaged in a brainstorming session researchers found that student groups whose leaders practiced high levels of transformational leadership were more creative. Specifically, these groups generated a higher number of original solutions to the problem presented and provided detail concerning the solutions they proposed than did other groups.⁷ Similar results were obtained from a 2003 study of supervisor/employee relations in 46 Korean companies conducted by researchers from Washington State University and Rice University.⁸
 - In 1999, researchers from several major U.S. universities reviewed over 100 studies examining leadership in a wide range of settings including small informal work groups, units of large complex organizations, military organizations, government agencies, educational institutions and U.S. presidential administrations. The findings from these studies were "surprisingly consistent."

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Leaders described as exhibiting charismatic, transformational and/or visionary qualities were repeatedly found to generate higher levels of follower commitment and to have positive impact on organizational performance and follower job satisfaction.⁹

The Meta-Analytical Studies

Results from five “meta-analytical” studies—studies that statistically combine results of a large numbers of independent studies—provide further evidence of the effectiveness of transformational leadership. (See the box below for more information on Meta-Analysis)

META-ANALYSIS

Meta-analysis is a statistical technique for combining and analyzing the results of a series of related but independent studies. It has been used widely in a number of disciplines particularly over the last 25 years to draw conclusions concerning everything from the effectiveness and safety of drugs and medical procedures to the effectiveness of psychiatric treatment protocols to the impact of computer-based instruction on student learning and academic performance. For example, a meta-analysis of the safety and effectiveness of the obesity control drug “fen-phen” (fenfluramine and dexfenfluramine) conducted by the Mayo Clinic led to the withdrawal of the drug from the US market in the mid-1990s. For more information about meta-analysis see Morton Hunt, *How Science Takes Stock: The Story of Meta-Analysis* (New York: Russell Sage Foundation, 1997). For information on how a meta-analysis is conducted see I.E. Hunter and F.L. Schmidt. *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings*. (Newbury Park, CA: Sage Publications, 1990).

The first meta-analysis was conducted in 1992 and examined studies on transformational leadership conducted in the 1980s and early 1990s.¹⁰ A second in 1995 reported on an additional 27 studies.¹¹ A third meta-analysis was conducted in 1996 and examined the combined results from 39 independent studies.¹² The fourth was published in 2000 and covered 24 studies.¹³ The final was published in 2002 and covered 49 studies.¹⁴ The findings have been remarkably consistent. Transformational leadership as measured by the multifactor leadership questionnaire has been shown to be a reliable predictor of organizational performance such as team performance, extra effort from followers, reduced turnover and cycle time, increased goal attainment and so on. Transformational leadership also results in greater follower satisfaction with the leader, greater overall employee job satisfaction, and greater employee commitment to the organization as well as lower job stress.

The strength of the relationship between transformational leadership and positive outcomes is particularly strong by the standards of social science research giving even more credence to the findings. While most correlations found in social science research range from 0.00 to 0.50, the correlations between transformational leadership and positive organizational outcomes generally ranges from 0.40 to 0.90 with most studies reporting correlations above 0.50.¹⁵ (See Exhibit 3.1 at the end of this article for a summary of results from the 2002 meta-analysis that are typical.)

Not only do transformational behaviors result in better performance but also the various components of transformational and transactional leadership have different effects as can be seen in Exhibit 3.1.

- Idealized influence/charisma seems to have the strongest impact on performance.
- Transformational leadership behaviors (idealized influence/charisma, inspirational motivation, intellectual stimulation and individualize consideration) are more effective than contingent reward.
- Contingent reward is more effective than management-by-exception-active, and
- Management-by-exception-active is more effective than management-by-exception-passive or laissez-faire.

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In short as John Antonakis and Robert J. House put it in their 2002 summary of the most recent findings evidence from a large number of studies suggests that leaders who want to be effective should proceed as follows:

[They] should display transformational behaviors most often, then contingent reward leadership, then management-by-exception active, then management-by-exception passive, and seldom, if ever, laissez-faire leadership.¹⁶

Results of the Globe Project

And, the news gets even better. This strong positive relationship between transformational leadership behaviors and performance seems nearly universal. It has been found to apply to manufacturing managers in India, Spain, Singapore, and Japan; banking/financial executives in Austria and Canada; professionals and administrators in China, the United States, and New Zealand; automotive executives and managers in Italy and Sweden; and the military in the United States, Canada, and Germany.¹⁷

It seems that regardless of culture, most of us have a generalized sense of what constitute the behaviors and attributes of an effective leader. We have a mental image of what a “leader” looks like and how a “leader” should behave and that image generally fits the transformational model. For example, when asked what traits fit their image of a leader most people say a leader is someone who is:

- Dedicated
- Goal oriented
- Informed
- Charismatic
- Decisive
- Responsible
- Intelligent
- Determined
- Organized
- And so on.¹⁸

The most extensive study to date of the attributes most people ascribe to effective leaders was undertaken in the mid-1990s by an international team of researchers. The Globe Project, as it was called, it involved over 170 researchers and over 15,000 managers in more than 60 cultures. Every major region of the world was included.¹⁹ The managers were asked to describe “the attributes that they perceived to enhance or impede outstanding leadership.”²⁰ The researchers sought to determine which, if any, attributes and behaviors were universally endorsed as evidence of effective leadership or leadership potential and which were culture specific. Based upon their analysis, the team of researchers was able to identify 22 leadership attributes or behaviors that were universally endorsed as positive or desirable, 8 that were universally viewed as negative, and 35 that were seen as positive in some cultures but negative in others. (See Exhibits 3.2, 3.3, and 3.4) One of the most interesting of the study findings was that transformational/charismatic attributes were universally endorsed as contributing outstanding leadership.

[There are variations from country to country and culture to culture of course. In one study, for example, charisma was found to have a greater impact on American followers than Mexican and the Globe Project found significant albeit subtle differences across cultures. But, the general finding that a charismatic/transformational leadership style is widely regarded as most effective seems to hold true regardless of location.²¹

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Although there are some important differences from country to country and culture to culture in the relative importance of its different components, transformational leadership appears to be the most effective style of leadership regardless of setting.

The Augmentation Effect

Not only does transformational leadership have a positive impact on performance but also its impact is increased if it is added to contingent reward behavior. More precisely, if a leader is currently engaged in contingent reward behavior but not transformational behaviors then he/she very likely will be able to improve both follower performance and satisfaction significantly by engaging in inspirational motivation, individual consideration, and so on. However, this augmentation effect doesn't seem to work the other way around. Transformational leaders who add contingent reward behaviors won't get the same boost in performance. This augmentation effect has been confirmed in studies of U.S. Naval and Army officers, Canadian managers, engineers in India, secondary school principals in Singapore, supermarket store managers in the Netherlands, clinical social workers in U.S. hospitals, and in numerous other studies.²²

PRACTICAL LESSON

These studies and hundreds of others provide very strong proof that effective leaders engage in five specific behaviors:

Idealized Influence--Effective leaders are charismatic—They exude confidence and competence. They appear to have a clear sense of mission, purpose, and values and behave in ways that are consistent with their purpose and values. We respect them for their commitment to achieving an important goal and for their willingness to make personal sacrifices to achieve that goal. We take pride in being associated with them.

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Contingent Reward--Effective leaders reward accomplishment—They make their expectations clear and reward performance. We know where we stand with them and that we will be rewarded if we meet or exceed their expectations.

Such are the behaviors of effective leaders. However, exactly how do effective leaders do these things? How do they find a vision and link it to our needs, hopes and aspirations so we too will find it appealing? How do they persuade us to follow them? What tricks, tools, and techniques do they employ to impress us? How do effective leaders work their magic? And, why does their magic work? I will discuss the answers to these types of questions in my next few articles. I will begin with a discussion of research that has sought to determine why transformational leadership is so effective. What is it about the transformational leader that makes him or her so attractive to us? The answers to this question, as we shall see in my next article, lie deep in our psyche.

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EXHIBITS

Exhibit 3.1 Meta-Analysis Results

The following is a summary of key findings from a meta-analysis of 49 leadership studies published in 2002. The numbers are correlation coefficients. The higher the number the stronger the relationship between the behavior and performance outcome.

Component	Overall Performance	Effectiveness(1)	Satisfaction (2)
Transformational Leadership Overall	0.46	0.50	0.40
Charisma	0.66	0.68	0.90
Inspirational Motivation	0.56	0.55	0.75
Individualized Consideration	0.55	0.59	0.81
Intellectual Stimulation	0.52	0.57	0.73
Transactional Leadership Overall	0.20	0.19	0.21
Contingent Reward	0.51	0.56	0.76
Management-by-Exception (Active)	0.05	0.08	(0.09)
Management-by-Exception (Passive)	(0.34)	(0.38)	(0.46)
Laissez-Faire Leadership	(0.38)	(0.37)	(0.53)

(1) Effectiveness refers to individual performance, team performance, extra effort, turnover reduction, cycle time reduction, or % of goals met.

(2) Satisfaction refers to follower satisfaction with the leader or general job satisfaction

Source: Uldarico Rex Dumdum, Kevin B. Lowe and Bruce J. Avolio. "Meta-Analysis of Transformational and Transactional Leadership Correlates of Effectiveness and Satisfaction: An Update and Extension in Avolio, Bruce J and Francis J. Yammarino, eds, *Transformational and Charismatic Leadership: The Road Ahead*, (New York: JAI, 2002), pp. 35-65.

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EXHIBIT 3.2
Universally Endorsed Positive Leader Attributes/Behaviors
The Globe Project

Administratively Skilled

Communicative

Confidence Builder

Coordinator

Decisive

Dependable

Dynamic

Effective Bargainer

Encouraging

Excellence Oriented

Foresight

Honest

Informed

Intelligent

Just

Motivational

Motive Arouser

Plans Ahead

Positive

Team Builder

Trustworthy

Win-win Problem Solver

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Source: Den Hartog, Robert J., House, Paul J. Hanges, and S. Antonio Ruize-Quintanilla, "Culture Specific and Cross-Culturally Generalizable Implicit Leadership Theories: Are Attributes of Charismatic/Transformational Leadership Universally Endorsed?," *Leadership Quarterly*, 1999, Vol. 10, No. 2, 239

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EXHIBIT 3.3
Universally Endorsed Negative Leader Attributes/Behaviors
The Globe Project

Asocial
 Dictatorial
 Egocentric
 Irritable
 Loner
 Non-cooperative
 Non-explicit
 Ruthless

Source: Den Hartog, Robert J., House, Paul J. Hanges, and S. Antonio Ruize-Quintanilla, "Culture Specific and Cross-Culturally Generalizable Implicit Leadership Theories: Are Attributes of Charismatic/Transformational Leadership Universally Endorsed?," *Leadership Quarterly*, 1999, Vol. 10, No. 2, , 240

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Exhibit 3.4
Leader Attributes/Behaviors That Vary Across Cultures
The Globe Project

Able to Anticipate
 Ambitious
 Autonomous
 Cautious
 Class Conscious
 Compassionate
 Cunning
 Domineering
 Elitist

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Enthusiastic
Evasive
Formal
Habitual
Independent
Indirect
Individualistic
Intra-group competitor
Intuitive
Logical
Micro-manager
Orderly
Procedural
Provocateur
Risk Taker
Ruler
Self-effacing
Self-sacrificial
Sensitive
Sincere
Status-conscious
Subdued
Unique
Willful

WorldySource: Den Hartog, Robert J., House, Paul J. Hanges, and S. Antonio Ruize-Quintanilla, "Culture Specific and Cross-Culturally Generalizable Implicit Leadership Theories: Are Attributes of Charismatic/Transformational Leadership Universally Endorsed?," *Leadership Quarterly*, 1999, Vol. 10, No. 2, , p. 241

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NOTES

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⁷ Sosik, John J., Surinder S. Kahai, and Bruce J. Avolio, Transformational Leadership and Dimensions of Creativity: Motivating Idea Generation in Computer-Mediated Groups, *Creativity Research Journal*, 1998/11/2, 111-121

⁸ Bono, Joyce E. and Timothy A. Judge, Self-Concordance at Work: Toward Understanding the Motivational Effects of Transformational Leaders, *Academy of Management Journal*, 2003, Vol. 46, No.5, 554-571

⁹ Fiol, C. Marlene, Drew Harris, and Robert House, Charismatic Leadership: Strategies for Effecting Social Change., *Leadership Quarterly*, 1999, Vol. 10, No. 3, 451

¹⁰ Cited in Cooper, Robert K. and Ayman Sawaf, *Executive EQ: Emotional Intelligence in Leadership and Organizations*, New York: Grosset/Putnam, 1997, 41.

¹¹ Cited in Cooper, Robert K. and Ayman Sawaf, *Executive EQ: Emotional Intelligence in Leadership and Organizations*, New York: Grosset/Putnam, 1997, 41

¹² Lowe, K. B., K.G. Kroeck and N. Sivasubramaniam, "Effectiveness correlates of transformational and transactional leadership," *Leadership Quarterly*, 1996, Vol. 7, 385-425

¹³ DeGroot, Timothy, Kiler D. Scott, and Thomas C. Cross, "A Meta-Analysis to Review Organizational Outcomes Related to Charismatic Leadership," *Canadian Journal of Administrative Sciences*, 2000/Dec. Vol. 17, No. 4, 356-371

¹⁴ See Shermer, Michael, *How we believe: the search for God in an age of science*, W.H. Freeman and Company, 2000, 240. Also see Sulloway, Frank J., *Born to Rebel: Birth Order, Family Dynamics, and Creative Lives*, New York: Pantheon Books, 1996, 371-375 for a "brief introduction to statistics" that provides an excellent explanation of the practical impact of even small correlations. For example, Sulloway looks at medical research comparing survival rates resulting from taking or not taking a medication. He notes that "a correlation of .10...is equivalent to improving your chances of surviving a potentially fatal disease, assuming you take an effective medication, from 45 percent to 55 percent. This improvement represents an increase in survival of 22 percent over the base rate (55/45=1.22). ...By comparison, a correlation of .30 is equivalent to nearly doubling your chance of survival, improving your

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likelihood of recovery from 35 percent to 65 percent. A correlation of .50 yield an even more dramatic difference in recovery rates, from 25 percent to 75 percent—triple the recovery rate of the untreated group” Sulloway, Frank J., *Born to Rebel: Birth Order, Family Dynamics, and Creative Lives*, (New York: Pantheon Books, 1996), 371-372. In short, even small correlations can make a difference.

¹⁵ Also see Frank Sulloway, *Born to Rebel*, 371-375 for a “brief introduction to statistics” that provides an excellent explanation of the practical impact of even small correlations. For example, Sulloway looks at medical research comparing survival rates resulting from taking or not taking a medication. He notes that “a correlation of .10...is equivalent to improving your chances of surviving a potentially fatal disease, assuming you take an effective medication, from 45 percent to 55 percent. This improvement represents an increase in survival of 22 percent over the base rate ($55/45=1.22$). ...By comparison, a correlation of .30 is equivalent to nearly doubling your chance of survival, improving your likelihood of recovery from 35 percent to 65 percent. A correlation of .50 yield an even more dramatic difference in recovery rates, from 25 percent to 75 percent—triple the recovery rate of the untreated group”, 371-372. In short, even small correlations can make a difference.

¹⁶ Antonakis, John and Robert J. House, “The Full-Range Leadership Theory: The Way Forward,” in Avolio, Bruce J. and Francis J. Yammarino Eds., *Transformational and Charismatic Leadership: The Road Ahead*, (New York: JAI, 2002,) 11

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¹⁸ See Lord, Robert G. and Karen J. Mahler, *Leadership and Information Processing*, (Boston: Unwin Hyman, 1991,) 46 for a complete table of prototypical leadership traits.

¹⁹ The results of the Globe Project are detailed in Hartog, Den, Robert J., House, Paul J. Hanges, and S. Antonio Ruize-Quintanilla, "Culture specific and cross-culturally generalizable implicit leadership theories: are attributes of charismatic/transformational leadership universally endorsed?," *Leadership Quarterly*,

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