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Higher development, brain integration, and excellence in leadership

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Abstract

Purpose – Today, there is a global need for more effective leaders. The purpose of this paper is to present a model of human development which covers the psychological, physiological, and sociological dimensions of leadership.

Design/methodology/approach – The authors review three research studies in which they have investigated the relationships between consciousness, psycho-physiological integration, and leadership performance using physiological measures, psychological tests, and self-reports.

Findings – These studies support the model that leadership ability is closely related to psycho-physiological refinement – the authors found that higher integration of the electrical brain activity, more mature moral reasoning, and more frequent peak experiences are found in top performers compared to average performers.

Research limitations/implications – The high frequency of peak experiences among top performers reveals the importance of such gratifying inner experiences for the business community.

Practical implications – The research suggests that practical methods for psycho-physiological refinement – such as the widely researched Transcendental Meditation technique – can be useful in developing more effective leadership. The brain integration scale presented here may be a reliable objective instrument for assessing an individual's leadership and performance capacity.

Originality/value – A unique contribution of the authors' research is to recognize that integrity – an essential requisite for leadership – has a physiological counterpart in the integration seen in the functioning of the brain through electroencephalography.

Keywords Leadership, Performance levels, Consciousness, Brain, Human resource development

Paper type General review

Introduction

> The overarching purpose of new paradigm business seems to be the enlightenment of all those working within it (Michael L. Ray, chapter in Renesch, 1992, p. 33).

Business, industry, and society need more effective and enlightened leaders. Forces driving this need include the shift to sophisticated knowledge work, globalization, and

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the need for increased self-management (Harung, 1996, 1999). However, despite the growing demand, leaders continue to be in short supply (Drucker, 1967; Hasselbein *et al.*, 1996). A survey that Accenture carried out in 2007 amongst more than 900 top executives in the world largest companies in the USA, Italy, France, the UK, Germany, Spain, Canada, Japan, and China found that only 55 percent reported that their organization was able to bring forward executives with the ability and talent to handle rapid changes and new learning (Moe, 2007). Teegarden (2006) observed "impending shortages of leaders and managers in every sector from government to big business to the nonprofit sector". In education, it is recognized that leadership is the catalyst to high performing schools and especially turnarounds; therefore the shortage of leaders is understood to be a major constraint to improving school performance (Gray *et al.*, 2007).

This shortage may to some extent be caused by the concept of leadership not being well understood. Indeed, despite thousands of empirical investigations, Bennis and Nanus (1985) argue that:

> Decades of academic analysis have given us more than 350 definitions of leadership [. . .] but no clear and unequivocal understanding exists as to what distinguishes leaders from non-leaders, and perhaps more important, what distinguishes *effective* leaders from *ineffective* leaders [. . .] leadership is the most studied and least understood topic of any of the social sciences [. . .] Leadership is like the Abominable Snowman, whose footprints are everywhere but who is nowhere to be seen (pp. 4, 20).

Northouse (2007, p. 3) offers the following definition of leadership:

> Leadership is a process whereby an individual influences a group of individuals to achieve a common goal.

Blank (1995) points out that leadership is not just about the leader, but is a field of interaction between the leader and those who are willing follower-allies. In the present article, the word "leadership" connotes effective influence not just toward any common goal, but toward superlative, positive results.

Within the leadership literature, conceptualizations about leadership have included trait approach, skills approach, styles approach, situational approach, psychodynamic approach, and cultural approach, among others (Northouse, 2007; Yukl, 2006). The trait and psychodynamic approaches have attempted to associate leadership effectiveness with particular attributes of the individual leader.

The present paper explores the construct of psycho-physiological integration as a potentially powerful new predictor of leadership performance which goes beyond the conventional leadership literature. We review our own research examining the relationships between leader performance and several measures of psycho-physiological integration, including measures of moral reasoning and self-development, brain integration, and frequency of peak experiences – experiences of higher consciousness. Since it is such experiences of consciousness that structure greater integrity in the brain and in the personality, the contribution of our paper is to illustrate and support a model of leadership which is based on development of consciousness.

How to understand leadership

Leadership as behavioral skills

Most current leadership literature focuses on the thinking, speech and actions of the leader. Kouzes and Posner (2002) define five behavioral practices of exemplary leaders, while Buckingham and Coffman (1999) propose four behavioral keys that define the world's greatest leaders. Covey (1989) outlines seven habits of highly effective people, such as be proactive; begin with the end in mind; put first things first; think win/win; seek first to understand, then to be understood; synergize; and sharpen the saw (principles of balanced self-renewal). Specific examples of leadership behavior include formulate strategic plans; inspire team effort towards a common goal; leading by example; trusting people; and high employee involvement. To this list Collins and Porras (2002) add clock building, not time telling (have focus on the long-term building of the organization, not on the leader); more than profits (sound human values are primary); preserve the core/stimulate progress; and home-grown management (promote from within the organization). A recent survey amongst associates of knowledge organizations found that communication and being strategic were the most important leadership behavior, while understanding numbers was by far the least important (Valvik, 2008).

Interventions at the levels of knowledge and behavior provide some benefits. For example, the capacity to formulate strategic plans in a manner that includes multiple team members should improve organizational action. Yet, such interventions are not sufficient in themselves to explain what makes one individual a more effective leader than another when both receive the same behavioral training. Insight into a deeper level reveals that these differences in behavior can in many ways be explained in terms of differences in the psychological maturity of individuals.

Leadership as a function of psycho-physiological maturity

> The mastery of the art of leadership comes with the mastery of the self. Ultimately, leadership development is a process of self-development (Kouzes and Posner, 2002, p. 298).

An emerging understanding in social sciences is that differences in leadership capacity and leadership performance can be predicted by measuring maturational differences in individuals. Loevinger (1976) formulated an empirically based theory of adult psychological development which explains that a single dimension called ego development or self-development manifests as systematic differences in the ways people understand themselves, interact with others, and make meaning of their worlds. As one's self-development grows toward more profound self-knowledge, there are changes in cognitive functioning, social behavior, and moral reasoning – thus encompassing the head, heart and guts that make a whole leader (Dotlich, 2006).

From this perspective, such characteristics as attitudes, broad comprehension, handling complexity, alertness, motivation, and sound ethical values are understood to all depend on measurable indicators of specific dimensions of psychophysiology functioning. We can now understand the principle "Hire for attitude, train for skills" that is employed by two world-leading Norwegian companies: Tandberg (videoconferencing) and Tomra Systems (recycling of beverage containers).

The significance of self-development calls for personal transformation that is more fundamental than leadership training for new conceptual understanding or new

behavioral skills. Refinements in self-development underlie improved leadership capacity and level of accomplishment (Torbert, 1991; Kegan, 1994; Rooke and Torbert, 2005; Joiner and Josephs, 2007). Such personal transformation can complement conventional leadership training. The great need for such an approach was noted by Kegan (1994), who argued that the mental demands of modern life require not just "a new set of skills to be 'put in' but a new threshold of consciousness" (Kegan, 1994, p. 165).

Even as new forms of organization entail expectations that all organizational members will function with greater personal autonomy as well as more genuine collaboration, Kegan noted, these very behaviors are beyond the capacity of many adults at their current levels of development. The expectations that workers will be self-initiating, self-correcting and able to conceive of the whole organization demand not merely skills which can be taught but a qualitative reordering of mental complexity.

Leadership is structured in consciousness

We propose that leadership is primarily structured in consciousness, which means that the capacity of leaders to achieve superlative performance for themselves and for those they influence spontaneously and progressively unfolds with development of consciousness. We posit that consciousness is the *single* dimension which encompasses a large spectrum of human attributes which are essential in actualizing leadership, and in the development of the resultant higher levels of knowledge and skills. As we shall see, there is a huge untapped human growth potential in today's society; consequently it is possible to develop excellence in leadership and followership on a large scale. Because development of consciousness is a natural unfolding of innate human capabilities, there are no negative side effects of this holistic growth (Maslow, 1968, 1998; Rooke and Torbert, 2005). We consider the consciousness dimension to be essential to realize better value from other factors that influence leadership, such as education, training, and work and life experience. Therefore, to accomplish most, to function at optimal levels and meet complex demands, a leader must develop this most fundamental level – consciousness – to the highest degree possible (Harung, 1999).

The notion that consciousness is a critical dimension underlying leadership performance has been articulated by Blank (1995, p. 10): "Consciousness – information processing capacity – creates leadership". Blank elaborates by explaining that expanded consciousness enables leaders to "step outside an existing paradigm, create an organizational vision, and observe the important interactions that make up day to day work activities" (p. 110). Consciousness means wakefulness. An expanded definition of what it means to an awake or conscious leader has been given by Marques (2006):

> An awakened leader maintains a high level of alertness in every regard: toward him or herself and his or her driving motives in various matters; toward the people he or she guides; toward the organisation he or she leads; toward the environment in which his or her organisation operates, and toward the entire universe (p. 5).

Our understanding of the vast untapped potential of consciousness, and its fundamental significance for the leader's performance, is informed by our research into the ancient Vedic knowledge of India (Maharishi Mahesh Yogi, 1963, 1969). This

tradition explains that experience of transcendental consciousness (TC), an ego-transcendent level at the core of life, is potentially available within everyone, if they are trained to access it. Transcendental consciousness is said to be a natural experience of restful wakefulness in which the mind is fully awake but completely silent. In this state consciousness is awake to its own unboundedness rather than caught up in the boundaries of any specific thoughts, feeling, and perception. Stace (1960) has compared descriptions from persons in different cultures and different ages, and suggests that there exists a universal experience of *pure consciousness* or transcendental consciousness.

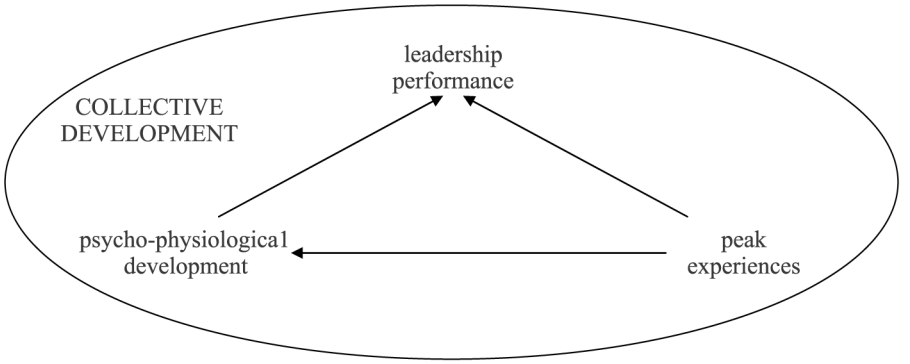
When we repeatedly access this foundation level, we gradually extend our range of development beyond the psychological stages to "higher states of consciousness". The experience of these advanced states of awareness is associated with inner silence and deep relaxation amidst dynamic activity, playfulness, stable inner happiness, broad awareness combined with sharp focus, reliable intuition, more luck or fortunate coincidences, and spontaneous right action. This advanced developmental level integrates values, attitudes, thinking and behavior into a unified wholeness, and enables leaders and their associates to optimally use their innate capabilities, and sustainably perform on a high level.

Glimpses of higher states of consciousness have been described in the West. Abraham Maslow (1968) found that moments of spontaneous *peak experiences* involve holistic cognition, resolution of polarities or conflicts, transcendence of ordinary time and space, and profound experiences of an integrated self, accompanied by feelings of bliss and wonder. Such experiences are usually related to peak performance.

Leadership success begins with transforming the leader

The common approach is to leadership is to learn its various aspects (e.g. strategy, organizational development, marketing, and logistics) one at the time through education, training, mentoring, and work and life experience. A complementary and holistic approach is to directly develop the consciousness of the potential leader. Heaton and Schmidt-Wilk (2008) have illustrated how peak experiences of transcendental consciousness lead to transformations in the leader's performance. The effects of such experiences of heightened consciousness can be conceived of as influencing psychological and physiological indicators of self-development, which in turn are determinants of leadership outcomes (see Figure 1). The present article reviews research evidence relating leadership outcomes to self-reported peak experiences of higher consciousness as well as to a number of psychological and physiological indicators of growing integration and maturity.

As we move from transcendental consciousness to more expressed mental levels, there is a shift from unified to diversified, from universal to specific, and from global to local. Increasing familiarity with transcendental consciousness makes it progressively easier to think and act in spontaneously accordance with the diverse conditions at the more expressed levels of life, for example different governmental systems, diverse national and regional cultures and socioeconomic conditions, specific industries and businesses, specific times, size of organizations, and level of leadership. Conscious awareness of transcendental consciousness is therefore a universal approach to developing leadership, which enables the leader to adapt more spontaneously to the varying conditions at the more surface levels of life.



Source: Adapted from Heaton and Schmidt-Wilk (2008)

Figure 1.
Inner foundations of developing leadership

In the paragraphs that follow, we elaborate on four dimensions of leadership development that include concepts not commonly covered by extant leadership theory. These include higher consciousness and enlightenment – permanent development beyond the common range of human growth; the physiological basis of leadership – specifically brain integration; and the sociological dimension of leadership – the degree of collective development of the organization for which leaders are responsible and to which leaders must be responsive. We then present research documenting the relationship between psycho-physiological refinement and leadership capacity. Finally, a simple and well-documented technique for personal development – Transcendental Meditation – is introduced to make our approach applicable in practice.

Our program of research studies on leaders, which is summarized later in this paper, has been informed by four streams of conceptual thought and prior research. These are:

- leadership dimension 1: psychological development;
- leadership dimension 2: higher states of consciousness;
- leadership dimension 3: brain refinement; and
- leadership dimension 4: collective development.

Leadership dimension 1: psychological development

> As adults grow toward realizing their potential, they develop a constellation of mental and emotional capacities that happen to be the very capacities needed for agile leadership (Joiner and Josephs, 2007, p. vi).

How leaders make meaning of experience and translate those meanings into effective thought and action, depends on the leaders level of psychological development. Developmental stages progress from ego-centric (pre-conventional), to socio-centric (conventional), to world-centric (post-conventional), to ego-transcendence perspectives on life (Loevinger, 1976; Cook-Greuter, 1999, 2002). Higher levels of self-development offer an increasingly broader repertoire for effective thinking and action.

From conventional to post-conventional

Leaders at different development positions operate with different "action logics" (Torbert, 1991; Rooke and Torbert, 2005). The implications of these developmental differences can be illustrated by contrasting the personal characteristics and management styles of conventional development (about 80 percent of today's adult population) with post-conventional development (about 10 percent of the adult population): from path following to path finding; from efficiency (doing things right) to effectiveness (doing the right things); from dependence to greater autonomy; from a narrow craft perspective to more holistic comprehension; from a short-term to a long-term perspective; from unilateral control to collaboration; from power (authoritarian) and mistrust to natural authority and trust; from reactive and "firefighting" to proactive and preventive; from a focus on problem solution to a focus on process and problem finding; from ambivalence to feedback to embracing feedback; from resistance to innovation; from win-lose to win-win interpersonal strategies; from "who is to be blamed" to "what can we learn" when something goes wrong; and from extrinsic motivation (winning, money, power, fame, envy, and fear) to intrinsic motivation (self-improvement and searching for meaning or peak experiences; Loevinger, 1976; Maslow, 1968, 1998; Torbert, 1991; Harung, 1999; Rooke and Torbert, 2005).

Leadership is not a static entity, but changes both over time and with respect to business, culture, socioeconomic conditions, etc. However, we argue that higher levels of psychological maturity unfold leadership qualities that will be an advantage in any culture, in any industry, and at any time. Therefore, the more advanced the self-development is, the more likely a leader will be successful.

Rooke and Torbert (2005) offer more detail of self-development in describing seven stages and applying them to leadership. Their research into 497 managers in different industries showed that about 80 percent of those at the post-conventional stage were at senior management levels. They argue that only those in the post-conventional range or above "showed the consistent capacity to innovate and to successfully transform their organizations".

Self-actualization. The highest stage of self-development in modern psychology has been defined as self-actualization. This stage lies at the upper end of the post-conventional range and corresponds to the full refinement of the individual ego. A note of explanation may be an advantage here, since the word "ego" commonly carries a connotation of negative, narrow-minded selfishness. This meaning is appropriate at earlier stages of self-development. However, increasingly with more mature self-development, ego-integration is much more complex and positive. Maslow (1968, p. 37) explains "it is just this [self-actualized] person, in whom ego-strength is at its height, who most easily forgets or transcends the ego, who can be most problem-centred, most self-forgetful, most spontaneous in his activities [. . .] In such people, absorption in perceiving, in doing, in enjoying, in creating can be very complete, very integrated and very pure".

Maslow further described self-actualized people in a terms of superior perception of reality, greatly increased creativity, increased detachment and ability to look at life from an objective viewpoint, and growth-orientation (as opposed to deficiency-motivation, which dominates at lower stages). According to Maslow (1968, p. 164), "the closer a person approaches towards self-actualizing, the better leader or boss he is apt to be in the general sense of the largest number of situations".

Unfortunately, research indicates that less than 1-2 percent of today's population is at the self-actualized stage (Cook-Greuter, 1999, 2008).

It is thought provoking that so few people today have reached the self-actualized stage. Why is this so? First, human development during childhood and adolescence is primarily driven by the brain's natural maturation, which culminates in the first half of the twenties. The other driver of development – ongoing life-experience – becomes the primary determinant of development the rest of one's life. Only if a person has experiences that fundamentally expand his or her consciousness, such as Maslow's peak experiences, can that person continue to develop throughout life and be progressively more effective when leading. However, as we shall see, such adult development is currently rare in the world.

Leadership dimension 2: higher states of consciousness

> We must ultimately assume at the highest theoretical levels of enlightened management theory, a preference or tendency to identify with more and more of the world, moving towards the ultimate of [. . .] a fusion with the world, or peak experience (Abraham Maslow, 1998, p. 42).

Beyond self-actualization, the development of higher states of consciousness offers an approach to further enhance leadership excellence. Maslow (p. 75) described the power of peak experiences for transforming the individual: "My feeling is that [. . .] the power of [one peak] experience could permanently affect the attitude towards life". He claimed that self-actualizers had a higher frequency of such experiences than the general population. Compared to normal life, such elevated experiences are characterized by (Maslow, 1968, pp. 103-14; Alexander *et al.*, 1990; Harung *et al.*, 1995; Harung, 1999, 2008, n.d.; Pearson, n.d.):

- greatly expanded awareness;
- high psycho-physiological integration;
- using all our capacities at the best and fullest;
- effortless and ease of functioning;
- least action – do less and accomplish more;
- undivided focus;
- witness or observer to own activity;
- feeling one with nature;
- inner relaxation amidst outer dynamic activity (restful alertness);
- playful, non-striving, and non-needing;
- intense inner happiness;
- inner fulfillment;
- automation in action – spontaneous right action;
- no outer resistance or obstacles;
- frequent luck or good fortune;
- reliable intuition;
- right timing;

- feeling of perfection;
- sense of invincibility; and
- lasting peak performance

In addition to Maslow, a few Western developmental psychologists, such as William James (1982), Eric Fromm (1960), William Torbert (1991), and Susanne Cook-Greuter (1999) have glimpsed growth beyond self-actualization to higher states of consciousness. However, Western psychology offers no integrated theoretical framework of such advanced development.

Eastern psychology, however, has long traditions of describing the further reaches of human growth and techniques to unfold this potential. In particular, the Vedic tradition of India presents theoretical models and practical techniques to develop through seven states of consciousness (Maharishi Mahesh Yogi, 1969; Alexander *et al.*, 1990). The first three states of consciousness – the ever changing waking, dreaming, and sleep states – are open to common everyday experience. The conventional and post-conventional ranges of psychological development in leadership dimension 1 both lay within the waking state of consciousness. The fourth state is Transcendental Consciousness. The fifth, sixth, and seventh states of consciousness – which increasingly integrate Transcendental Consciousness with active life – are collectively known as enlightenment. Higher states of consciousness represent human transformations much more fundamental and far-reaching than those between conventional and post-conventional levels of development. We propose that experience of these advanced states can be a driving force to more effective and enlightened leadership.

These descriptions may be recognized by many leaders, since we found that glimpses of higher states frequently occur. In fact, more than 70 percent of the more than 100 persons we have tested report at least one such peak experience in their lifetime.

Transcendental Consciousness (the fourth state)

Transcendental Consciousness (TC) is experienced as a state of *restful alertness* or silent wakefulness (Alexander *et al.*, 1990; Travis and Pearson, 2000) in which the mind is completely silent, but fully awake, and free of thinking, feeling, and perception. This represents the deepest level of the individual's awareness known as the "higher self". TC contrasts with the "lower self", which is comprised of the thinking mind, the deciding intellect, and the experiencing ego (Maharishi Mahesh Yogi, 1969). The terms "higher" and "lower" are used here to reflect more expansive, holistic thinking versus more localized and restricted awareness. TC is the simplest form of human awareness or the ground state of consciousness, which underlies all thoughts, feelings, and actions.

Anwar El Sadat, the former president of Egypt, who won the Nobel Peace Price for his pioneering work to create peace in the Middle East, described the peace and joy which are indicative of temporary experiences of Transcendental Consciousness: "I was able to transcend the confines of time and space [...] Everything came to be a source of joy and delight [...] the achievement of perfect inner peace [...] [which could] provide a man with absolute happiness". From then on, he writes "My paramount object was to make people happy" (Pearson, n.d., pp. 190-1).

The following experience from our research on world-class athletes suggests a glimpse of Transcendental Consciousness (Harung, n.d.):

> I have quite a lot of times experienced a state where I am completely inside myself and everything else disappears. This is a form of relaxation [...] And there is nothing that can touch me. It feels very good. It is not that those periods are so very long. But it is beautiful to have them, once a week or once a day. Just sit down and feel that now it is only me that matters (Heidi Tjugum, a Norwegian world-class handball goal keeper).

Enlightenment (the fifth, sixth, and seventh states)

Enlightenment is inclusive of the silent experience of Transcendental Consciousness together with the changing states of waking, dreaming, and sleeping (Maharishi Mahesh Yogi, 1963, 1969). In other words, the restful and expanded wakefulness of Transcendental Consciousness is integrated with active life (Alexander *et al.*, 1990; Travis *et al.*, 2004). When the stable experience of inner happiness, satisfaction, and freedom is maintained during everyday activity, the individual no longer is inhibited by stress and lack of fulfillment. The experience of TC in activity is typically temporary in the beginning and becomes more and more permanent with further development.

Poets such as Emily Brontë, Tennyson and Wordsworth; scientists such as Einstein, Kepler, Maxwell, and Schrödinger; composers such as Beethoven, Brahms, and Mozart; and world-class athletes including Pelé, Patzy Neal, Thomas Alsgaard, and Roger Bannister have all reported a comprehensive range of glimpses of higher states of consciousness (Pearson, n.d.; Harung, 2008). Here is a sample experience indicative of a glimpse of enlightenment from Billie Jean King, one of history's greatest tennis players (King and Chapin, 1974, p. 199):

> It almost seems as though I'm able to transport myself beyond the turmoil on the court to some place of total peace and calm. Perfect shots extend into perfect matches [...] I appreciate what my opponent is doing in a detached abstract way. Like an observer in the next room [...] It is a perfect combination of [intense] action taking place in an atmosphere of total tranquillity. When it happens, I want to stop the match and grab the microphone and shout that's what it's all about, because it is. It is not the big prize I'm going to win at the end of the match or anything else [...] On my very best days I have this fantastic [...] feeling of invincibility [...] When I'm in that kind of state [...] I feel that tennis is an art form that's capable of moving both the players and the audience [...] When I'm performing at my absolute best, I think that some of the euphoria that I feel must be transmitted to the audience.

Similar glimpses are probably familiar to many successful executives. For example, they may have had such experiences when spontaneously and effortlessly guiding a group meeting, without losing the big picture, about where the organization needs to go as a whole.

Leadership dimension 3: brain refinement

> Brainpower is to the information age what iron, coke and oil were to the industrial age – the one necessary ingredient on which all else depends (Kelley, 1985).

We could locate the "CEO in our brain" in the prefrontal cortex. The prefrontal cortex integrates the concrete present with past memories, emotions, values, and planning,

and determines our next step. This process is similar to the departments in a company interacting with the CEO, who integrates the information with the company's vision and the economic situation to decide upon organization-wide action. Similarly, within the brain, the prefrontal cortex knits localized brain activity into the wholeness of experience.

Under high stress the prefrontal cortex goes off line (Sullivan and Gratton, 2002). Behavior with the prefrontal cortex off line is like a company whose leader has suddenly disappeared. Under high stress the leader begins to over-react to life-experiences, thereby causing excessive tear on the mind and body, and functioning in a more primitive and less reasoned way. The leader under stress would therefore be more irritable and lack the capacity to recognize problems or exploit possibilities.

The good news is that brain circuits are not set in stone – they change with each experience (Buonomano and Merzenich, 1998). You continually build and modify those brain circuits that allow you to excel in the changing business environment. Since your brain is changing every moment, every leader should ask: am I moving in a more integrated or less integrated direction? Or is the brain just changing without becoming more refined in its functioning? A method to measure brain integration and the impact of life-experiences would be of value to leaders and their associates.

Measuring leadership capacity: the Brain Integration Scale

Three brain wave measures calculated from the electrical activity of the scalp (electroencephalography or EEG) have been combined to form the Brain Integration Scale (Travis *et al.*, 2002):

- *Higher coherence in frontal executive areas, the CEO of the brain* – With higher coherence, frontal areas unite perception, planning, strategizing, and behavior into a more successful performance. All other brain areas send information to the prefrontal cortex; this area integrates that information; and then activates the rest of the brain in a coordinated way.
- *Higher alpha relative power* – Higher alpha relative power during tasks indicates that the person can remain at the balance point—being calm and alert at the same time. Greater inner balance allows the leader to be more adaptable to changes in his or her associates, customers, market, technology, and economy.
- *Efficiency in brain functioning* – Economy in thinking and acting is essential for an effective leader. Better match between task demands and brain activation translates into more efficient behavior. Brain areas involved in a task will be primed and activated only when needed and only for long as needed. Conversely, brain areas not needed, are not activated. In this way, resources are not wasted.

We found that scores on this scale positively correlate with higher emotional stability, moral reasoning, and inner stability; and lower anxiety (Travis *et al.*, 2004). Our ongoing research shows that world-class leaders have higher levels of brain integration than average-performing controls, as will be discussed later.

Leadership dimension 4: collective development

The most expansive aspect of our model integrates the thinking and actions of individual leaders with their social system (Harung, 1999). Since people have stages of

development, and since social systems are a collection of people, it follows that social entities also have recognizable stages of collective development. As individual thought and action arise from the quality of individual consciousness, so organizational values and programs arise from the quality of collective consciousness of the organization. Figure 1 shows how collective development provides a context that influences all three other components in the model: peak experiences, psycho-physiological development, and performance of the leader.

Followers naturally want to be able to relate to a leader. Therefore, leaders are to some extent a reflection of their followers. One could even say a group of people gets the leader it deserves. In other words, there is correspondence between the developmental stage of the leader and that of the collective consciousness of the social system that she or he leads. Collins and Porras (2002, p. 34) suggest this correspondence with respect to high-performing businesses: "Perhaps the continuity of superb individuals atop visionary companies stems from the companies being outstanding organizations, not the other way around". Similarly, with respect to society, Maslow (1998, p. 171) writes that "we could define a good society [. . .] as one in which [. . .] those who were elected to high office were the very best persons in the society". This relationship between leader and followers also explains why politicians who are elected based on platforms designed to fundamentally improve society often fall short of achieving their inspiring goals. Without the broader perspective, citizens just cannot support progressive courses of action.

We propose four progressive relationships between leaders and followers based on the "what", "how", and "why" of organizational performance (Harung, 1999):

(1) Today, most organizations have a primary focus on isolated tasks or "what". Such organizations are characterized by centralized command-and-control, fear-based performance systems, excessive bureaucracy, a focus on the short-term (e.g. the next quarter's profits), training and privileges centralized at the top, and a resistance to feedback and change.

(2) In a more advanced stage of the relationship, the stage 1 reality continues, but the emphasis shifts to process integration or "how" (e.g. business process re-engineering and total quality management), beginning team formation and self-management, and investment in raising the level of competence throughout the organization.

(3) As leaders and associates develop still greater brain refinement, the relationship extends towards a visionary and value-based perspective with the focus on "why". Such social entities emphasize self-managing associates, mutual respect and tolerance, equality, freedom under responsibility, win-win interpersonal strategies, high performance demands and standards, entrepreneurship, the satisfaction of all stakeholders to a considerable extent, and greater corporate social responsibility (Harung, 1999; Collins and Porras, 2002). At this level the organization itself approaches self-actualization.

(4) We project a still more advanced level, where the main focus is on integrating "what", "how", and "why" into a wholeness, for example the total organization in the environment. Such advanced social systems, which correspond to collective enlightenment, are characterized by developing higher states of consciousness in all associates, and by organization-wide excellence. To

illustrate the nature of stage 4, the following quote describes how the Norwegian national handball team enjoyed what seems to be a momentary "collective peak experience" when winning the World Championships (Harung, n.d.):

> Sometimes, all the way from the warm-up the communication with the other team members is good; you know in advance that today you are going to succeed in an unbelievable way. On such days there is a shared, positive mood in the team. It is abstract and gives energy. I feel the response from others. Everybody is fully present in the situation. There is a mass suggestive effect where we all melt into a greater fellowship. I get chills down my spine. I feel invincible when this community mood is there – a strong togetherness or coherence. During such exhilarated times, when things fall into place [. . .] the action of each player is extremely well coordinated with those of all the other players. There is rhythm and harmony in the team. We read each other correctly, things float, and there is a high spirit and energy. Everybody contributes their energy into the team. Definitely extreme energy is created.

Because the majority of adults in today's society operate at the "what" level, this stage of organizational development still appears to be the dominant mode. There are some organizations that have transformed to the "how" stage, and few in the transition to or at the "why" stage. Such advanced companies are typically featured on "best places to work" lists.

It follows from the relationship between leader and followers that enlightened leaders can only enact their full leadership capacity in enlightened organizations.

Research results on world-class performers

Over the last ten years we have investigated the relationships between consciousness, psycho-physiological integration, and leadership performance using physiological measures, psychological tests, and self-reports.

Phase 1: testing world-class leaders

This first study examined frequency of peak experiences in 22 internationally known people, selected for their ability to function at the top in business, government, sports, and education, as well as in creative fields such as performing arts (The Performance Group, 1993; Harung *et al.*, 1995). Frequency of momentary experiences of higher states of consciousness was significantly higher in the top-level subjects compared to two control groups ($p = 0.026$ and $p < 0.001$).

The next two phases focused on world-class leaders in a single area. In addition, these next two phases included physiological measures, standardized paper-and-pencil measures of moral reasoning (Gibbs *et al.*, 1992) and self-development (Loevinger, 1976), and self-report questionnaires and interviews regarding development of consciousness (Harung *et al.*, 1995; Travis *et al.*, 2004).

Phase 2: testing world-class athletes

In this study, the authors worked with the National Olympic Training Centre in Norway (*Olympiatoppen*) and the Norwegian School for Sports Sciences (*Norges Idrettshøgskole*) to select world-class athletes who had placed among the top ten in major competitions (Olympic Games, World Championships, World Cup, or similar) for at least *three* different seasons (Harung *et al.*, n.d.). Thirty-three Norwegian world-class athletes were compared to 33 average performing athletes on five measures: two tests

of human development (i.e. self-development and moral reasoning); two tests of neurophysiology (the Brain Integration Scale, and speed of adaptation to a loud tone); and the same measure of frequency of peak experiences used by Harung *et al.* (1995).

Compared to the control athletes, the World Class performers had higher levels of brain integration (2.5 versus 1.2, $p < 0.0001$), faster habituation to a loud tone (3.9 versus 9.5, $p < 0.0001$), higher levels of self-development (6.0 versus 5.2), and higher levels of moral reasoning (3.5 versus 3.2, $p = 0.021$ for self-development and moral reasoning combined, since these two measures are closely related to each other). There were no significant differences in frequency of peak experiences in these two groups of athletes.

The speed of adaptation to a load sound has significance for leadership. Rapid habituation indicates the ability to quickly disregard irrelevant information, enabling the leader to maintain his focus despite many daily distractions. The average world-class athlete in our study displayed a level of self-development well below self-actualization, thereby illustrating the extensive performance potential that exists in the world today.

Phase 3: testing top-level managers

This last study investigated physiological and psychological characteristics of top-level managers (Travis *et al.*, n.d.). Twenty Norwegian top-level managers – who had held their top positions for an average of 18 years – were compared to 20 middle or low-level employees on three measures of self-development:

(1) brain integration;

(2) moral reasoning; and

(3) frequency of peak experiences.

As seen in Table I, top-level managers had significantly higher levels of brain integration, moral reasoning, and all four questions in the survey of peak experiences.

Variable	Comparison group mean	(SD)	Top-level managers mean	(SD)	$F(1,38)$	p value
Brain Integration Scale	*1.56*	(0.27)	*2.34*	(0.21)	4.12	0.05
Moral reasoning	*3.21*	(0.09)	*3.66*	(0.10)	11.33	0.002
Survey of peak experiences						
TC during waking	*2.40*	(0.63)	*4.69*	(0.67)	4.87	0.034
Luck	*2.10*	(0.53)	*4.72*	(0.56)	9.01	0.005
TC during eyes closed rest	*2.00*	(0.64)	*4.64*	(0.67)	6.58	0.015
TC during sleep	*0.75*	(0.51)	*2.56*	(0.54)	5.18	0.029

Notes: For the four questions in the survey of peak experiences had a frequency scale of 1 (never) to 11 (all the time). The italicized numbers in the table give the average frequency of the answers for each group. The average frequencies that occurred can be explained as follows: "1" signifies never having had the experience; "2" signifies having the experience once or twice in one's lifetime; "3" signifies having the experience less than once a year; "4" signifies having the experience once a year; "5" signifies having the experience two to three times a year

Table I.
Means, standard deviation, F values, and p values for the top-level managers and the control group

With respect to higher development, Table I shows that the difference was greatest for luck or fortunate coincidences ($p = 0.005$). One top-level manager says: "It happens all the time that I am surprised of how things fall into place". Another comments: "I have many times had the feeling of being in the right place at the right time". A third CEO writes: "It seems to me that I often have luck in business, when buying a property or something. It often turns out that those businesses that did not come through would not have been so smart, even though I would have done it if not something outside my control had come in the way". Additional research on the relationship between consciousness, luck, and success can be found in Herriott (1999).

Top-level managers also frequently report advanced experiences while resting with eyes closed. One manager said: "I often feel an extreme feeling of happiness. Energy flows in a current throughout the whole body – like several comfortable waves – like a mild wind." Another executive explained that it is: "The experience that everything is right [. . .] an intense happiness and inner joy". A third manager reports that this type of experience may spontaneously give important insights: "A feeling that thoughts float, find their own ways, and I let them float. I have experienced that in such situations formerly unthought-of solutions/alternatives pop up. Also 'warning lamps' have popped up in such situations, warnings that later have proven to be very correct".

Almost all the top-level managers reported spontaneous peak experiences. Seeing the prevalence of such elevated experiences and their association with successful leadership, it seems important to bring this to the attention of the business community.

The execution of sports is centered on mind-body coordination while management is mainly mental. It is therefore not surprising that the difference between the world-class athletes and controls is largest in terms of psycho-physiological measures (brain integration and habituation to load sound), while for the top-level managers and controls the difference is most market on the mental plane (frequency of peak experiences and moral reasoning). Although our data suggests that even average performers have some glimpses of higher consciousness, overall we found that top-level performers tend to have more intensive and frequent experiences of such heightened awareness.

It is gratifying that both the world-class athletes and the top-level managers display more mature ethics on the moral reasoning test. In other words, our research suggests that "morality pays". Similarly, both Collins and Porras (2002) and Dam (2006) write that organizations based on sound human values and ethics, including corporate social responsibility (CSR), in the long-run outperform organizations where these features are less pronounced. Dam concluded that "there is a clear and direct association between CSR and different measures of corporate financial performance".

Wholeness, integration and integrity

Taken together these three studies on world-class performers provide empirical support for the model introduced in Figure 1, namely that leadership performance is associated with peak experiences and psycho-physiological integration. The experience of Transcendental Consciousness has been described as a state of silent wakefulness. It is this experience of unfragmented wholeness or unboundedness that enlivens in the mind the capacities for seeing new relationships and new paradigms, which Blank (1995) identified as an essential capacity in leaders. Since mind and body are intimately connected, there is naturally a correlation between greater frequency of

this holistic experience and greater integration in the nervous system, as measured by the Brain Integration Scale. Our research also suggests that brain integration may be the physiological basis of personal integrity. Our top performer leaders not only had more frequent peak experiences and higher brain integration scores, but also higher scores on moral reasoning.

Trait and psychodynamic theories (Northouse, 2007) have not identified personality characteristics that significantly predict leadership success. Some leaders are extraverted, others are more introverted; some are analytical, others more synthesizing; some are intellectual, others more intuitive. Indeed, Peter Drucker (1992, p. 115) claims that there is no such thing as a leadership personality, but he goes on to say that what leaders have in common is the "congruence between deeds and words, between behaviour and professed beliefs and values, that we call 'personal integrity'". He calls integrity "very old-fashioned" (p. 122) and underlines that the requirements for effective leadership do not change with time. We agree with Drucker that personal integrity is a universal prerequisite for effective leadership, for example irrespective of culture, business, and time. Likewise, Kouzes and Posner (2002) have repeated found that integrity is the one characteristic most frequently when subjects are asked to describe their favorite leader.

Limitations of the research

In our phase 1 study, the comparison groups were convenience samples who were not selected from among recognized leaders. Phase 2 and phase 3 improved upon this design by using matched comparison groups from similar professions and organizations. In any non-experimental correlational design, there is a possibility that the observed relationship between performance and our psycho-physiological measures may be attributable to some other variable not measured in these studies. The strongest design for finding a causal relationship between these psycho-physiological measures and performance would be to measure changes in performance in a longitudinal control group design in which one group of subjects is randomly selected to receive an intervention designed to produce psycho-physiological transformations. In the section below we identify a possible intervention that has shown to produce changes in brain integration and psychological development.

Transforming leaders

> What lies behind us and what lies before us are tiny matters compared to what lies within us (Ralph Waldo Emerson, quoted in Covey, 1989, p. 96).

Maslow (1968, pp. 249-53) found that spontaneous peak experiences may restructure an individual's knowledge of himself and the world, bringing about a higher stage of development and enhanced feelings of wellbeing. However, since these peak experiences occur in a spontaneous or non-structured manner, they do *not* provide a *systematic* means to cultivate human potential.

Meditation practices may provide a means to cultivate peak experiences and appear to be common among high performing leaders. In their research on relating psychological development to leadership, Joiner and Josephs (2007) found that of those leaders at the self-actualizing stage, 50 percent had a daily meditation practice and 35 percent had a semi-regular practice.

An example of a well-researched and widely used meditation technique that systematically fosters human growth is Transcendental Meditation (TM) from the Vedic tradition (Maharishi Mahesh Yogi, 1963, 1969). Transcendental Meditation is a simple, natural, and enjoyable procedure that is practiced two times 20 minutes daily, morning and evening, sitting comfortably with eyes closed in a chair or on a plane, bus, or train. An entire body of research reveals how TM enhances capacities that enable people to systematically realize and stabilize the type of peak experiences Maslow describes. The combination of effortless practice and extensive benefits means that transcendental meditation is based on a theme loved by all managers: "do less and accomplish more."

It is now 50 years since Maharishi Mahesh Yogi came out of India and introduced Transcendental Meditation to the world. Since then over six million people of all ages, walks of life, cultures, and religions have learned this technique. Today, there are many people who have practiced TM for 30, 40 or 50 years (see below). Over 600 research projects have been published, verifying the personal experience that there are only positive effects and that the benefits are cumulative, i.e. the longer the practice, the stronger the improvements. In this way transcendental meditation appears to be an effective and practical way of developing the leader from within:

> The Transcendental Meditation technique has been ideally suited to my hectic life. It has demonstrably reduced my stress and helped to maintain my good health, and has immeasurably benefited my family and business relationships. Importantly, it has helped me to make clearer, more effective decisions on the job and has reinforced my integrity in my dealings with all my stakeholders. I encourage you to look more closely into this highly effective technique – and to take up the practice (Ramani Ayer, Chairman and CEO of The Hartford Financial Services Group, Hartford, CT, USA. Mr Ayer has been practicing the TM technique for 35 years).

A ten-year comparative investigation of self-development (Chandler *et al.*, 2005) found that those who practiced the TM technique significantly increased on this measure: the number of meditating subjects who scored on the self-actualizing stage increased from 9 percent at pre-test to 38 percent at post-test, compared to 1 percent of control samples functioning from this level at both pre-test and post-test (the controls are in line with today's norm; see above). McCollum (1999) used the Leadership Practices Inventory (Kouzes and Posner, 2002) in an eight-month pretest-posttest control group study in one company. He found that subjects who learned the transcendental meditation technique grew significantly more than controls in their expression of leadership behaviors. Other studies on the TM technique have found substantial improvements in a wide spectrum of areas, including reduced stress; and improved health, creativity, academic performance, job productivity, and relations (Alexander *et al.* 1993; Schmidt-Wilk *et al.*, Harung, 1999; Schmidt-Wilk, 2000; Alexander *et al.*, 2004). The research on Transcendental Meditation is important since this technique represents a practical tool to satisfy the need for more leaders in contemporary society.

Owing to the benefits for health, the National Institutes of Health in USA has provided over 24 million dollars in grants for research on TM. The findings include that TM is as effective as medication in reducing high blood pressure (Schneider *et al.*, 1995). Instead of customary negative side effects, this simple technique has only positive "side effects". A randomized Canadian study has found a 55 percent reduction

in health care costs over a six-year period for a group of TM practitioners as compared to non-meditating controls (Herron and Hillis, 2000).

> I am impressed by the extensive published research showing the effects of TM practice on hypertension, especially since the TM technique is so simple, natural, and effortless. If you have a technique that you practice 20 minutes twice a day, a technique that allows you to be dynamic in your activity and yet not to accumulate the stress that wreaks havoc on your health, then you have a key to better health (Gary P. Kaplan, MD, PhD, neurologist and Clinical Associate Professor of Neurology at New York University School of Medicine; also recipient of the Albert H. Douglas Award from the Medical Society of the State of New York).

Developing higher states of consciousness

Alternating the experience of Transcendental Consciousness with daily activity integrates the experience and brain patterns of TC with the brain patterns of thinking, speech, and action. This integration of TC and activity is the hallmark of higher states of consciousness. A group of individuals who had been practicing the Transcendental Meditation technique from seven to 33 years were selected based on their distinctive inner experiences, which reflect stable higher states of consciousness. These enlightened individuals were characterized by higher practical intelligence, greater emotional stability, higher moral reasoning, higher happiness, and higher scores on the Brain Integration Scale (Travis *et al.*, 2004). The personal transformation resulting from TM is much more substantial than what is commonly meant by the word development. This applies in particular to the growth of higher states of consciousness, where the shifts are much greater than between the stages of psychological "development". This difference stems from the direct enlivenment of transcendental consciousness during TM, while other approaches tend to operate on the more surface levels of the mind, which are less potent. Says the cross-country skier Thomas Alsgaard (Harung, n.d.), who won 11 gold medals in Olympic Games or World Championships:

> Deeper aspects have much greater potential. Much, much greater potential [. . .] [than] the intellect, experience, and knowledge. [. . .] My point of view is that this is what differentiates the best from the second best.

Practice of the Transcendental Meditation technique by a relatively small number of people directly addresses the fourth dimension of leadership – collective consciousness. Several studies show beneficial effects on a team or an organization when sufficient numbers practice the TM technique. Documented effects include reduced absenteeism and customer complaints, and improved communication, productivity, sales, and profit (Schmidt-Wilk *et al.*, 1996; Broome *et al.*, 2005). This suggests that this well-researched technique for development of individual consciousness can in one stroke enhance all four dimensions of leadership.

Suggested action steps

We suggest three ways for organizations to gain substantial impact of the development of higher individual and collective consciousness.

First, individual leaders can undergo testing to measure their quality of brain integration. The data provided from the Brain Integration Scale is easy to gather by a qualified person. Testing could also be offered on an organization-wide basis. The

Brain Integration Scale appears to index inner control of life and is fairly independent of subject reactivity or faking good. Brainwaves do not function in ways that make people look good or match desired standards. The brain's EEG does not lie.

Second, organizations could conduct an audit of their members to determine the extent to which mental peaks are being experienced. These data address a set of issues that are typically not explored. A picture of the organization as a whole on issues such as moral reasoning, frequency of advanced experiences, and fortunate circumstances or luck would be a revealing portrait of the collective consciousness of the group.

Third, organizations could provide training in self-development techniques that have substantial supporting research, such as the Transcendental Meditation technique, to enhance psycho-physiological functioning. Stress management programs are common in many organizations. A substantial positive return on investment would be realized if the focus of such programs was on enhancing the CEO of the brain throughout the organization.

Conclusion

> My premise is that leadership is not exceptional, but the natural expression of the fully functional personality. As Warren Bennis put it, "The process of becoming a leader is much the same as becoming an integrated human being." The burning question is why these qualities are not expressed more commonly in corporate executives (John W. Thompson, chapter in Renesch, 1992, p. 210).

We have documented that the primary dimension in and necessary basis for effective leadership is higher self-development. In today's complex world there is a widespread need to promote advanced psycho-physiological development for leadership: "Less than 10 percent of managers have mastered the level of agility needed for sustained success in today's turbulent business environment" (Joiner and Josephs, 2007, p. v).

Yukl (2006) has observed that despite society's investment in the multi-billion dollar leadership training industry, relatively little research exists on the effectiveness of leadership programs. It may be that the primary reason that the effectiveness of leadership development is uncertain is that conventional leadership training programs do not achieve the deeper personal transformation through which potential excellence in leadership naturally emerges.

Research on the Transcendental Meditation program illustrates that the needed psycho-physiological refinement can be attained in a simple, effortless, and enjoyable way. In contrasts to the general dearth of evidence on outcomes of leadership development programs, there is extensive research indicating this program does reliably promote holistic human development and has tangible practical benefits for organizations. By combining direct human development with the appropriate education, training, and mentoring, today's leadership shortage can be addressed.

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