Peak performance and higher states of consciousness

A study of world-class performers

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Transforming performance by transforming the performer

This paper will investigate the effect of higher stages of human development on improving performance. We argue that the developmental stage of the individual determines, in a very fundamental way, the contribution his or her performance can make. Actualizing higher development has positive implications for the performance of the individual and the organization. Therefore, procedures which systematically cultivate human maturation can unfold performance potential.

Two ranges of human development will be examined. In the first section we consider stages of psychological development from western psychology and management. Harung and Heaton[1] described how unfolding higher stages of psychological development can be the basis for improving the productivity of knowledge workers. The first section of this paper will review and extend this further. The remaining sections of this paper will describe higher states of consciousness from the Vedic Psychology of Maharishi Mahesh Yogi[2,3]. This advanced range is a natural continuation of the psychological development described in contemporary social science – dramatically extending this development into the domain of sustainable peak performance.

Ordinary developmental range

Stages of psychological development in western psychology

According to Drucker[4, p. 95], "the people who do make the difference" for productivity in the developed countries are the growing number of knowledge and service workers. In fact, Drucker[5] estimates that now such people account for three-quarters (if not four-fifths) of the workforce in all developed countries (p. 75), and that by the year 2010 non-manual workers will constitute 90 per cent or above of the workforce (p. 36). Yet, stagnant productivity among such workers remains a major challenge in these countries. For instance, despite hundreds of billions of dollars spent annually in the USA on computers and

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related technologies to improve the productivity of individuals and groups, the National Research Council[6] concludes that there has been no measurable impact on productivity. The council has termed this the "productivity paradox".

Drucker[5, p. 75] is in agreement with the National Research Council when he writes that productivity of service workers and knowledge workers is "abysmally low". In fact, he claims that in many areas the productivity of non-manual workers is actually going down, e.g. clerical work, salespeople, engineers, and teachers. Drucker (p. 76) goes on to write that, "Unless we learn how to increase the productivity of knowledge workers and service workers, and increase it fast, the developed countries therefore face economic stagnation and severe social tension". In this paper we will focus on improving the performance of knowledge workers and service workers, since this is what matters most in today's economy. It should, however, be noted that human development will also be beneficial for the productivity and quality of manual work.

Harung and Heaton[1] present evidence of distinct stages of psychological development and behavioural differences associated with each stage. They argued that developmental shifts would fundamentally enhance a person's capacity for productivity. There are several alternative, but similar developmental models (e.g. [7,8]). For simplicity we will describe only Loevinger's model as adopted for the business world by Torbert[9]. Table I shows Torbert's term and description for each stage. The middle column summarizes his findings in six studies involving some 500 managers.

Developmental stages[7,8] entail the whole personality, including character development, moral development, social development, impulse control,

Stage name	% at stage	Description
Opportunistic	2	Short-time horizon, concrete things; fragile self-control; hostile humour; externalizes blame; rejects feedback
Diplomatic	8	Conforms with rules and group norms; thinks in stereotypes; suppresses own desire; seeks membership and status
Technician	45	Interest in problem solving; efficiency over effectiveness; perfectionist; evaluates self, others, and world based on craft logic; ambivalent about receiving feedback; has a longer time horizon
Achiever	36	Results-oriented; long-term goals; initiative; inspiration; respects individual differences; seeks mutuality rather than hierarchy in relationships; open to feedback
Strategist	9	Ability to reframe situations and define new goals, i.e. path finding; views the situation independently; role flexibility; creative conflict resolution; concern with total organization in the environment; aware of paradox and contradiction; empowers others

Table I.
Torbert's descriptions of developmental stages

cognitive complexity and the self-concept. At different stages of development one cognitively relates to the world and socially relates to other people in distinct and recognizable ways, as is evident from Table I. Generally, there is little change in one's stage of psychological development after adolescence.

A diplomat's guiding frame is in the social context of the immediate group; this developmental position is characteristic of teenagers[9]. The diplomat is identified with others' expectations. Most late teens or early adults transform to technicians. A technician's frame has shifted from the expectations of others, which are found to be multiple and conflicting, to dedication to the "craft logic" of a single field of endeavour, e.g. engineering, accounting, marketing. Table I shows that technician is the most common developmental position among adult professionals.

The next and second most common stage is the achiever, whose identity is tied to meeting goals. The limiting frame of this stage is the implementation of an existing strategy, rather than the identification of more value-adding goals and the creation of new, more productive systems. At the strategist stage a person ceases to take the frame of the existing social system for granted and becomes interested in what a best structure would be. The improvement of performance at this stage involves a recognition that there may not only be a need to change actions, but that a change of goals, structures, and human values may also be needed[1].

Beyond the strategist stage, Torbert[9] conceived of the possibility of higher development, found in rare individuals. Loevinger[7] has a more mature stage which she denoted integrated, corresponding to Maslow's[10] self-actualization. Cook-Greuter[11, p. 124], based on tests on over 3,000 subjects, concluded that less than 1 per cent of the tested population had reached this advanced stage of self-development.

The significance for performance of development from the technician stage to the strategist stage and beyond can be summarized as follows[9]:

- from fragmented understanding to more unified comprehension and a "superior perception of reality"[10, p. 26];
- from short term to long term;
- from reactive to proactive and preventive;
- from the perspective of a functional speciality (craft logic) to the perspective of the effectiveness of the overall system;
- from win-lose to win-win interpersonal strategies;
- from a fragile sense of satisfaction depending on outer objects to an inner, stable state of happiness and self-sufficiency;
- from dependence to functional autonomy;
- from path following to path finding;
- from conventional to post-conventional.

Because knowledge workers have control over the direction, content, methods and quality of their work, they now have responsibility for managing their own effectiveness[4,5]. To be effective today, knowledge workers must be ready to rethink continuously the processes, priorities and goals of their own work and that of their organization as a whole. However, research has found that a vantage point which can rethink goals is not available until one reaches the strategist stage – which currently is reached by only around 9 per cent of adults (Table I).

The significance of developmental stages to behaviour in organizations is receiving increasing appreciation. New forms of organization entail expectations that organizational members will function not only with greater personal autonomy, as seen above, but also at the same time with more genuine collaboration – both of which are characteristics of relatively advanced development. In his book *In over Our Heads: The Mental Demands of Modern Life*, Kegan[8] has pointed out these behaviours are beyond the capacity of many adults at their current levels of development. The expectations that workers will be self-initiating and self-correcting and able to "conceive of the whole organization", Kegan explains, demands not merely skills which can be taught but also a qualitative reordering of mental complexity. In a similar vein, Torbert[9] has explained how organizational initiatives for continuous learning and quality improvement cannot be fully implemented without fundamental personal transformation.

Development stages have implications, as well, for peak performance. Characteristics of peak performers in business have been observed by psychologist Charles Garfield[12]. These include: an internal source of direction and value, capacities of self-management and team building, ability to correct course, and cognition which integrates opposites – including macro and micro perspectives. It is striking to note that these are just the same qualities which unfold in higher stages of psychological development[7,10]. Although Garfield seems to suggest that these qualities can be adopted by individuals who assume a motivated attitude, in reality they are by their nature not merely "a new set of skills to be 'put in' but a new *threshold of consciousness*" [8, p. 165], (italics in original).

Maslow observed that personal transformations towards higher stages of psychological development could be triggered by what he called peak experiences. These moments were said to involve holistic cognition, resolution of polarities or conflicts and transcendence of ordinary time and space, accompanied by feelings of bliss and wonder[10, pp. 249-53]. He referred to these experiences as peaks because they are valued as moments of high elevation and deep inspiration clearly set apart from ordinary life. Such experiences can restructure the individual's knowledge of oneself and the world, bringing about a higher stage of development, and enhance feelings of wellbeing. One effect of such experiences is to transform the individual from deficiency motives (feelings of lack in the individual) towards "being" motives (higher values such as truth, beauty and justice). Maslow observed, as well, that

greater regularity of peak experiences was characteristic of exceptionally developed individuals whom he called self-actualizers.

Contemporary western psychology and management have lacked knowledge of how peak performance, even temporarily, could be produced at will. The next section will introduce the concept of higher states of consciousness – further stages of development in which sustained peak performance can become a reality. The research presented below indicates that these higher states of consciousness are essential to explain the inner dimension of world-class performance.

Upper developmental range

Higher states of consciousness described by Vedic Psychology

In the East there are long traditions of techniques of meditation to cultivate advanced human development. In particular, the Vedic tradition of India represents the most ancient and extensive knowledge about consciousness and techniques for its development[13]; although the practicality of this knowledge to enhance our quality of life and performance has largely been lost and/or misinterpreted.

Vedic knowledge has been recently brought to light and systematized by Maharishi Mahesh Yogi[2,3] in a clearly delineated theory of higher states of consciousness, which extend the range of human development as commonly understood in western psychology. Figure 1 gives an overview of the range of modern psychology compared with the range of Maharishi's Vedic Psychology (hereafter referred to simply as Vedic Psychology). Self-identity, in the range of modern psychology, is based on a mental conception of oneself. In conventional stages, one's identity is socially derived from the expectations of others. At the more mature post-conventional stages of development, one's identity is more individually constructed. Yet, in both cases, from the perspective of Vedic Psychology, one has still not realized the full reality of who one is. The range of higher states of consciousness in Vedic Psychology is based on direct experience of Self which transcends mental conceptions.

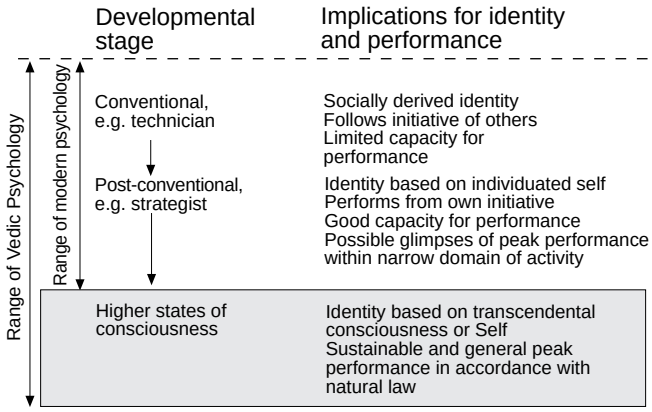

Figure 1.
Progressive unfolding of peak performance

The Vedic tradition contains standardized procedures to unfold higher states of consciousness practically. The principal procedure of Vedic Psychology is the Transcendental Meditation technique, which is described as an effortless procedure for allowing active awareness gradually to settle down so that a silent, unbounded and unified state of transcendental consciousness can be directly experienced.

Research findings suggest that the systematic cultivation of transcendental consciousness through Transcendental Meditation has catalysed advanced stages of psychological development. A ten-year longitudinal study[14,15] found shifts to the highest stages of self-development as defined in western psychology[7]. No advances were found in three matched control groups followed over the same ten-year period. Approximately 40 per cent of the experimental group had achieved the endpoint of psychological development – corresponding to Maslow's self-actualization – compared with 1 per cent in the control groups. Systematic transcendence has also been associated in a number of studies with growth of self-actualization (for a statistical meta-analysis and comparison of meditation techniques see Alexander *et al.*[16]. The developmental effects of Transcendental Meditation are further indicated by the following findings: decreased anxiety, job tension and fatigue; and improvements in practical intelligence, moral development, positive affect, self-esteem, employee effectiveness and job satisfaction (for further details, please refer to [17,18]).

Western psychology has concerned itself with the three familiar states of consciousness: waking, dreaming and sleeping. In fact, the entire developmental range of modern psychology consists of substages within the waking state of consciousness. A few developmental psychologists in the West (e.g. [10,11]) have glimpsed a growth potential beyond this common range. However, they appear to have lumped together in less specific concepts several elevated states of awareness. Vedic Psychology[3,19] clearly describes four sequential higher states of consciousness in this upper developmental range.

Descriptions of the first two of these higher states of consciousness provided the basis for a brief questionnaire in a field study to examine the possible relationship between world-class performance and higher states of consciousness[20]. The first higher state is transcendental consciousness, a state of restful alertness or silent wakefulness. Vedic Psychology describes it as "a state of inner wakefulness with no object of thought or perception, just pure consciousness aware of its own unbounded nature. It is wholeness, aware of itself, devoid of differences, beyond the division of subject and object"[21, p. 123]. An illustrative experience of transcendental consciousness during the practice of Transcendental Meditation was recorded in Mason *et al.*[22]:

> My mind is not moving, I don't feel like I am breathing … Everything is standing still, but at the same time, I know then I am awake and alert. I feel deeply relaxed and at peace with myself.

Transcendental consciousness is described as a natural state of awareness, intrinsically available to all human beings. Whereas Transcendental Meditation

is a technique to allow the mind to experience it systematically, there are certainly recorded instances of spontaneous experiences of this state throughout history. An example of a spontaneously occurring transcendental experience was given by the British poet Alfred Lord Tennyson:

> All at once, as it were out of the intensity of the consciousness of individuality, the individuality itself seemed to dissolve and fade away into boundless being, and this not a confused state, but the clearest of the clearest, the surest of the surest … utterly beyond words[23, p. 268].

Not only poets but also leading scientists, such as Einstein, Kepler, Maxwell[24], and Schrödinger[25] have written of such experiences with equal eloquence[26]. Although all these individuals indicate that these experiences transformed their understanding of reality, in the absence of a systematic means for its induction, none was able to maintain it on a permanent basis.

The next higher state is called cosmic consciousness because it is inclusive of a continuum of transcendental consciousness together with the changing states of waking, sleeping and dreaming. Alexander *et al.*[15] have analysed how this stable higher state of consciousness meets the criteria of a stage that extends development beyond the range of stages generally observed by western psychologists. In cosmic consciousness the silent wakefulness of transcendental consciousness is integrated with active living. Through repeated experience of transcendental consciousness one's sense of "who I am" becomes primarily situated in pure consciousness, which Vedic Psychology calls the self. Thus one's identity is no longer attached to one's thoughts, feelings, and behaviour:

> The activity assumed by an ignorant man to belong to himself – to the subjective personality that he calls himself – does not belong to his real Self, for this, in its essential nature, is beyond activity. The Self, in its real nature, is only the silent witness of everything[2, p. 98].

Transcendental consciousness is "the most balanced state of life … a field of all possibilities, which gives rise only to perfectly orderly and coherent thoughts" [27, p. 98]. The integration of that state with activity leads to "the minimum amount of energy expended and with the maximum amount of work achieved; … the least strain and the maximum amount of gain to the doer and to the surroundings"[19, p. 151]. In the analysis of physicist John Hagelin and Herriott[28] transcendental consciousness has properties identical with the unified field of natural law underlying physical creation; thus experience of this state aligns the mind of the individual with the holistic functioning of natural law. Action in cosmic consciousness thereby takes on the same high degree of efficiency that is seen in the functioning of nature – which always follows the principle of least action. Action is also said to become spontaneous right action "which produces life-supporting effects for the doer and the entire creation, action which helps the evolution of the individual and simultaneously serves the cosmic purpose"[2, p. 276].

One of the greatest tennis players in the history of the sport, Billie Jean King, reports the following experience suggestive of a glimpse of the state of cosmic consciousness:

> 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's not the big prize I'm going to win at the end of the match or anything else[29, p. 199].

Characteristics of transcendental consciousness coexisting with activity are indicated by words such as "beyond the turmoil on the court" in "some place of total peace and calm" and "total tranquillity". Even though she is performing with great dynamism, she feels "detached" from the field of action "like an observer in the next room". Consistent with the predicted association of spontaneous right action with the growth of cosmic consciousness, her play is perfect: "perfect shots extend into perfect matches … perfect combination of action taking place in an atmosphere of total tranquillity".

Not only world-class athletes, but also leading composers such as Bach, Beethoven, Mozart and Brahms, and renowned leaders of society such as Václav Havel and Anwar el Sadat (Egypt) talk about the great significance glimpses of higher states of consciousness had for their performance[26].

The states of transcendental consciousness and cosmic consciousness have been studied scientifically, in terms of their physiological and psychological correlates. Since spontaneous occurrences of these states are rare, the research has been performed primarily on practitioners of the Transcendental Meditation technique. Transcendental consciousness is a physiological state of "restful alertness" that can be distinguished from the aroused alertness characteristic of waking and the more inert states of dreaming and deep sleep. Indicators of deep rest during transcendence include decreases in respiration rate, skin conductance level, and blood lactate which are greater than those found during simply resting with eyes closed[30]. Research on experiences of transcendental consciousness during TM found that these experiences correlated highly with both virtual respiratory suspension (indicating deep rest) and elevated alpha EEG (electroencephalography) coherence in the brain (an indicator of neurophysiological integration and enhanced wakefulness[31]).

Physiological indicators of growing cosmic consciousness include: significantly lower resting baselines of spontaneous galvanic skin response (a measure of nervousness), respiration rate, heart rate and plasma lactate (a stress-related hormone)[30]; enhanced autonomic stability during mental tasks or in responses to stressors[17,32]; and decreased health-care utilization[33]. Another indicator of cosmic consciousness is the ability to maintain silent inner wakefulness even during the inertia of deep sleep. Both surveys and longitudinal studies indicate that increased frequency of such experiences of "witnessing sleep" are positively correlated with measures of self-actualization, creativity, intelligence, and reaction time (e.g. [34,35]).

To explore further the utility of these higher states of consciousness, Harung *et al.*[20] looked at their relationship to world-class performance. As this study involved subjects who had not been exposed to the theory and practices of Vedic Psychology, it provided an opportunity to examine the generalizability of that theory.

A study on world-class performers

According to the theory of Vedic Psychology, consciousness is the basis of knowledge, knowledge the basis of action, action the basis of achievement, and achievement the basis of fulfilment[2]. We proposed to apply a measure of "quality of consciousness" to a group of subjects selected for their reputation for outstanding achievement. We predicted that world-class performers would report more frequent experiences of silent wakefulness on its own (transcendental consciousness), and inner silence coexisting with activity and with sleep (cosmic consciousness) than have been found among less distinguished performers. Our research was carried out in association with the world-class performance study by The Performance Group[36,37]. The Performance Group studied the experiences, attitudes, work habits, techniques, and insights of a number of "world-class" performers – "people selected because they are widely acknowledged to be among the best in their respective fields"[37, p. 7].

As an adjunct to the interview format and other instruments developed by The Performance Group, subjects were given a brief questionnaire which we had prepared concerning states of consciousness.

Subjects

The Performance Group has described the subjects of the world-class performance study as "people known internationally for their ability to achieve and maintain a position among the top performers in their fields"[36, p. 3]. These subjects were selected from creative fields such as performing arts, and as well as from education, government, and business. Those investigated showed a good mastery of English. For this reason the whole study – including our questionnaire – was conducted in this language. The Performance Group[36] reported a qualitative analysis based on interview responses from 36 world-class subjects (for a list of their names, see Appendix).

Our analysis, reported below, is based on completed and anonymous questionnaires received back from 22 of these same subjects. Subjects were asked to fill in the questionnaire after the interview and then mail it in; some questionnaires were not returned. Also, on some of those which were returned, not all questions had been answered. This explains why we below refer to only 19 subjects in one instance. Only a few of the world-class leaders responded that they regularly practised some form of meditation. To our knowledge none of them practised the Transcendental Meditation technique. We therefore assume that the subjects were not biased by prior familiarity with the concepts of Maharishi's Vedic Psychology.

Instrument

The brief questionnaire had these instructions:

> The following questions ask you to recollect subjective experiences which you may have had. Take your time to try to recall examples of the types of experiences which are described. If an experience is not familiar to you, mark 1, "Never to my knowledge" on the frequency scale.

For each experience, subjects were asked to mark the frequency and write an example from their experiences. The 11-point frequency scale was as follows: 1 = never to my knowledge; 2 = once in my lifetime; 3 = less than once a year; 4 = once a year; 5 = once in six months; 6 = once in three months; 7 = once a month; 8 = once a week; 9 = once a day; 10 = most of the time; 11 = all the time.

The 11-point scale was used to allow the data from this sample of world-class performers to be compared with other samples who had previously responded to some of the same questions using the same scale[34].

Findings

The first question was based on descriptions of transcendental consciousness:

> Have you experienced a perfectly peaceful state in which the mind is very awake, but still; a state when awareness seems expanded beyond the boundaries of thought, beyond the limits of space and time?

The mean response from 19 subjects was 4.6 (more than once a year); eight of 19 subjects indicated a frequency of at least once a week. Some of the subjective experiences described were:

- When necessary during competition.
- When I write. I write poetry (published).
- Listening to classical music either at home or in a concert. During summer months in our summer place on the lakeside. During leisurely meals with my wife.
- When I was younger this happened to me frequently in my daily meditation. Today it is a gift I receive in certain liturgical celebrations where the faith, the piety and the suffering of the participants touch me deeply.
- Occasionally when alone, meditating and relaxing in the mountains, the peace and calm is absorbed into me and I feel the strength of the mountains and the weakness of mankind.

A second question was formulated to test experiences suggesting growth of cosmic consciousness:

> Have you experienced that while performing activity there was an even state of silence within you, underlying and coexisting with activity, yet untouched by activity? This could be experienced as detached witnessing even while acting with intense focus.

The mean response from 22 subjects was 5.4 (once every few months); ten subjects (45 per cent) reported having the experience once a week or more frequently, and eight at least once a day (36 per cent). Some examples given were:

- I am aware of this all the time and I use it sometimes to check myself and my performance.
- There is a deliberate attempt to try to take an outsider's view in the most hectic work period. Step aside – detached witnessing is a good description of the phenomenon.
- In all of the important decisions that I have had to make … especially in the defence of human rights. During 20 years this was a daily recurrence. Now it would be more or less monthly.
- During my election I viewed it from both the perspective of a participant and also from a social perspective, almost at a distance.

A third question about witnessing sleep, also designed to test experiences of cosmic consciousness, did not receive as many high frequency responses – the mean response to this question was 3.2 (3 = less than once a year). This question was:

> During deep sleep, have you ever experienced a quiet, peaceful, inner wakefulness? You awake fresh and rested, but with the sense that you had maintained a continuity of silent self-awareness during sleep.

Comparison with other samples

This first phase of the world-class performance study has not involved any control groups; we can, however, compare the frequency of reported experiences to findings with previous samples who have responded to the same questions. Cranson *et al.*[34] used question 3 (transcendence or inner wakefulness during sleep) in an investigation of the relationship between measures of intelligence and experiences of higher states of consciousness. Fifty-five university students who served as a comparison group in Cranson's study reported average post-test frequencies of 1.6, significantly lower than the mean of 3.2 for our subjects ($t = 2.27$, $p = 0.026$).

In addition, two of the questions were used with another sample of 68 subjects in an ongoing programme to compare personal development of students at Maharishi University of Management (MUM), USA, with students at other colleges. On question 3, the average for the students at colleges other than MUM was 2.7, compared with the 3.2 mean of the world-class sample. This difference was not significant.

On question 1 (transcendental consciousness) the average for the 68 students was 1.8 compared with 4.6 for our subjects. Differences in the overall pattern of response between the world-class sample and the larger student sample were analysed using a χ^2 test. This statistics instrument compared three categories of responses within each sample:

(1) those who marked 1 (never to my knowledge) on the frequency scale;

(2) those who marked 8 (once a week) or more on the frequency scale; and

(3) those who marked between 2 and 7 on the frequency scale.

This test was highly significant ($\chi^2 = 17.92$, $p < 0.001$). Frequencies of responses to question 1 are further compared in Table II.

There is a difference in the two groups in terms of age because most of the world-class subjects were above 40. Since students are reported to have at least as frequent momentary transcendental experiences as older subjects[38], we have no reason to expect that the age factor alone would account for the differences reported above. This conclusion is further supported by Csikszentmihalyi[39] in talking about flow experiences, exceptional experiences which are said to involve total absorption, deep enjoyment, order in consciousness, and intrinsic reward (see also below). Csikszentmihalyi found that age is not a factor in experiences of flow.

Table II. Frequency of transcendental consciousness experiences in world-class subjects compared with students

Frequency of experience of transcendental consciousness	Percentage of world-class sample (n = 19)	Percentage of student sample (n = 68)	Ratio between groups
Everyday or all the time	17	1.5	11 : 1
At least once a week	44	6	7 : 1
At least once in life	56	18	3 : 1

Seventy-seven per cent of the world-class performers responded at least "once a year" or more to at least one of the three questions about higher states of consciousness (questions 1-3). For question one, 56 per cent responded to "at least once in life" (see Table II). These findings can be contrasted to related research which used different instruments to assess frequencies of peak experiences. Estimates of how many people have had peak experiences at least once in their lives vary, depending on how the questions have been asked (see review in Alexander *et al.*[16]). One stringent study found that only 2 per cent of those tested had had transcendental experiences even *once* in their lives[40].

With respect to question two, an exceptional 45 per cent of the world-class subjects (ten of 22) reported experiences of silence in activity with a frequency of "at least once a week", and 36 per cent (eight of 22) responded that it was a daily occurrence. In comparison, a week-long investigation of more than 100 men and women working full-time at a variety of occupations, where over 4,800 responses were collected, found that less than 1 per cent of the responses were flow experiences[39].

The studies of peak experiences and flow experiences are not strictly comparable with the states of consciousness concept investigated here. Since peak and flow experiences probably are precursors to higher states of consciousness, the real difference in the two groups may indeed be larger than indicated by the comparison of frequencies. On the other hand, Csikszentmihalyi's way of sampling here may tend to underestimate the

frequency of flow experiences. Nonetheless we conclude that these findings reinforce the point that higher states of consciousness are far more common among world-class performers than in the general population.

Directions for further research

In the present study we observed that not all of the world-class performers reported experiences of higher states of consciousness – five subjects in the sample replied "never" to all the questions. It would be interesting to explore additional sets of data about these subjects to see if differences among world-class subjects on these questions correlate with other within-group differences on other measures. According to Maslow[10] there are people with exceptional specific talent who are not self-actualized. World-class performers who scored low on our questions may have been of this category. Maslow also found that the more widespread creativeness, displayed in more than one area of life, co-varies with self-actualization. We would expect that those subjects with higher frequencies of higher states of consciousness were enjoying greater general creativity and more balanced fulfilment, in addition to their professional accomplishments in a specific area.

As the initial study of world-class performers did not involve a control group, these preliminary findings can be strengthened by collecting comparison data from average performers from the same professions and cultural groups. Qualitative explorations of experiences of spontaneous right action during performance could also be a rich direction for further research.

There are limitations to relying solely on a brief self-report questionnaire such as was employed in this preliminary exploration of the relationship between higher states of consciousness and excellence in performance. Subjects are not used to evaluating these subjective states, and it cannot be avoided that they apply different interpretations to the questions, as is evident from their quotations. We suggest that further studies of higher states of consciousness and excellence in action utilize multiple criteria of both the dependent variable – world-class performance – and the independent variable – state of consciousness. Additional measures of world-class performance could include peer evaluation, biographical data and evidence of performance; while development of consciousness could also be assessed by open-ended questions, psycho-physiological measures and cognitive-behavioural criteria. Our adjunctive role in the world-class performance study did not provide the opportunity to implement additional measures with these subjects. Despite limitations, this study makes a significant contribution to testing the theory of Vedic Psychology, especially when these findings are considered together with related research on the psychological, physiological and behavioural correlates of the development of higher states of consciousness.

An expanded conception of peak performance

According to Vedic Psychology, performance beyond the ordinary has its basis in higher states of consciousness. Such states attune the individual mind with

natural law which administers the whole universe according to the principle of least action:

> When this whole stream of life is entirely natural, every activity is directed, controlled, and governed by one single law, namely the law of least action. This means natural law. Nature acts in a way such that it makes no noise – it only produces results. That is the government of nature, the best organizer[27, p. 95-6].

Economic functioning has been noted with reference to flow experiences and self-actualization. Csikszentmihalyi[39, pp. 63,87] finds that flow – characterized by total involvement – spontaneous, almost automatic activity, and a feeling of unity with the environment – involves lower levels of activation and less cues needed to accomplish the same mental task. Maslow remarked that self-actualized people manifest great efficiency:

> Greater efficiency, making an operation more neat, compact, simpler, faster, less expensive, turning out a better product, doing with less parts, a smaller number of operations, less clumsiness, less effort, more foolproof, safer, more "elegant", less laborious (Maslow, quoted in Garfield[12, p. 154]).

Dahl's[41] Presidential Address to the Seventh World Productivity Congress describes the same quality of simplicity in peak performance:

> Peak performance is often beautifully simple: there is no waste of motion or energy. There is knowledge and focus. There is continuity – hence no waiting or downtime. There is an elegance that transcends and transforms. All of us seek it in all that we do, and when we succeed, there is a satisfaction so deep and abiding that our spirits are lifted and our minds are at peace.

Features which distinguish Vedic Psychology's model from conceptions of peak performance in contemporary management are outlined below:

Concepts of peak performance in contemporary management include:

- temporary;
- narrow domain;
- consciousness refers to objects;
- actualizes individual potential.

Concepts of peak performance in Vedic Psychology include:

- continuous;
- generalized;
- consciousness refers to itself;
- actualizes natural law.

First, the common understanding is that peak performance remains latent most of the time. Even for those who have had temporary moments when awareness is focused, energized and harmonized, the moments do not last. A quotation from the former world record holder runner Robert de Castella illustrates this point: "Sometimes when running at night, I can feel the power, the rhythm to go farther without effort, to float. Often I'm too tired, but occasionally I experience this sensation" [36, p. 24].

Vedic Psychology, on the other hand, offers theory and research suggesting that experience of a higher order can become a continuous feature in higher states of consciousness. In distinction to Csikszentmihalyi's[39] concept that an experience of flow depends on the special conditions of the activity, Vedic Psychology describes stable higher states of consciousness which are the product of gradual refinement and integration of the nervous system. In addition, Vedic Psychology provides systematic procedures for culturing daily experiences of transcendence as a means of developing, over time, stable higher states of consciousness. The research on Transcendental Meditation reviewed above, points in this direction. In addition, Cranson *et al.*[34] investigated the relationship between measures of intelligence and experiences of higher states of consciousness. He tested students at Maharishi University of Management and another university and then retested them two years later. The 55 control students did not improve significantly over the years on any measure. The 45 MUM students practised Transcendental Meditation and the advanced Transcendental Meditation-Sidhi programme. Their average response to the question on witnessing sleep (question 3) increased from 2.9 to 4.7. At the same time their scores on IQ and reaction time tests improved significantly, compared with controls. Scores on the IQ and reaction time tests were correlated with the growth of higher states of consciousness, as measured by the question on witnessing sleep. Without such evidence that higher states of consciousness can be systematically developed in practice, this paper would have a limited significance.

The second point of comparison concerns the range of peak performance. Exceptional achievement in a specific behavioural domain, putting a golf ball for instance, does require focused skill training and practice. Under these conditions, a well-prepared athlete will occasionally rise to special peaks of performance which are marked by effortless, breakthrough achievement, and harmony of mind, body and surroundings[42]. Our notion of peak performance, however, is more than this. Higher states of consciousness described by Vedic Psychology are stable structures which are said to influence the quality of every thought and action. According to Vedic Psychology, when the perfect orderliness of transcendental consciousness is permanently established, no area of life will be untouched by the evolutionary influence of natural law. With contemporary notions of peak performance we could conceive of breakthrough performance in a specific domain of activity but also, in the same person, severe flaws in other aspects of life. It is also possible that such a person could achieve fame himself or herself, but at the same time cause a detrimental effect on others or the environment. A performer in higher states of consciousness, by comparison, would have balanced and holistic development, and also a life-supportive influence on her or his surroundings.

For our third point of comparison, we refer to the conclusions which The Performance Group drew from its qualitative interviews in the world-class performance study:

> In fact, it is this heightened sense of "awareness" that emerged from our analysis and evaluation of the data as the most significant similarity [among world-class performers] … Thus it is "Awareness" which evolved as the focal point of the Model for World-Class Performance, as a result of the study. As reflected in the model, a world-class performance is generated by an awareness of the desire and willingness to learn … All of the participants are very aware of intangible background factors which they feel influence their performance … they are aware of the stages or processes they go through when they perform[36, pp. 17-18].

As our subjects generally reported exceptionally high frequencies of higher states of consciousness, as measured by our questionnaire, we are in substantial agreement with our colleagues in this conclusion. Yet it is important to point out that what we mean by awareness or consciousness is not the same as the common usage of those terms. In common usage, the idea of "raising consciousness" about something implies directing the person's attention to a particular concept, value, or object of perception. The emphasis is on the object that is known, not on the knower *per se*. In contrast, in Vedic Psychology the emphasis is on the knower – it is on raising the level of alertness, the range of comprehension, the capacity for knowing in the subject, independent of the consideration of any particular objects of attention. The procedure for accomplishing this, in fact, is a process which allows consciousness to shift from attention to objects, to a state in which consciousness is aware only of itself – a self-referral state in which consciousness is its own knower, known, and process of knowing[43]. This is what takes place during the practice of the Transcendental Meditation technique. Experience of this self-referral state of transcendental consciousness enlivens natural functioning in the whole mind and body, as evidenced by research on the psychological and physiological consequences of the state of transcendental consciousness, reviewed above.

The fourth distinct point is that the model of performance in higher states of consciousness conceives of peak performance as not merely the actualization of individual talents, but also as the actualization of natural law or the expression of cosmic intelligence. Vedic Psychology explains that action in cosmic consciousness is initiated by "… the power of Nature, which is the cause of the vast and incessant activity of creation and evolution throughout the cosmos"[2, p. 284]. Maharishi's[27,43] concept of administration through natural law would seem to explain Csikszentmihalyi's[39, p. 63] observation: "Somehow the right thing is done without you ever thinking about it or doing anything at all … It just happens". A similar concept of a connection to the cosmos has been poetically expressed by one of the subjects in the world-class performance study – Valery Gergiev, Artistic Director and Principal Conductor, Kirov Ballet and Opera Theatre:

> You come to the performance. At 8 o'clock it starts. And you are silent. You look at the orchestra or your opera performers. Even in the darkness they watch your eyes. You move your hands and the music begins and, once in a great while you deliver something they cannot explain … a truly world-class performance … It is moments like these which connect us human beings with the gods. It is magic[37, p. 60].

Patsy Neal[44, p. 169], with reference to her own experience of making a seemingly unexplainable 48 of 50 shots in winning a college basketball national championship in the USA, puts it this way:

> One accomplishes things one never dreamed of doing. One walks beyond the usual physical powers and goes into the power of the universe, finding streams and sensations that seem to have no beginning or end within the self.

Conclusion

In this paper we have presented preliminary findings concerning an association between world-class performance and more frequent experiences of an expanded, alert, and settled state of consciousness, even while engaged in dynamic activity. An implication of this research may be that by systematically cultivating a deeply settled but dynamically alert state of consciousness, the individual can achieve peak performance not only on rare occasions, but also as a sustained and continuously evolving reality.

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Appendix: World-class performers (participants in the world-class performers study[36])

Martti Ahtisaari	Finland's Secretary of State, previous UN negotiator in Bosnia. Won the greatest victory in the UN history by landing the treaty leading to a free Namibia. Now presidential candidate in Finland.
Akito Arima	Professor in physics and president at the University of Tokyo, Japan. One of the most influential figures in Japanese science.
Paulo Evaristo Arns	Brazilian Cardinal Archbishop, PhD author. Famous for his fight for human rights and for opposing the military regime in Brazil 1964-1985.
Rafidah Aziz	Minister of Trade and Industry in Malaysia "who happens to be a woman" (*Fortune*). The only woman cabinet member in a predominantly Muslim nation. Economist and politically active for 25 years. Head of the women's contingent – and largest faction – in Malaysia's ruling party.
Hector Babenco	Argentinian, naturalized Brazilian. Film director of Academy Award winning film *The Kiss of the Spider Woman*.
Susan Caroline Bambrick	Australian professor, exceptional academic achiever. Director at the University of New England. Member of several international councils and commissions. Accomplished surfer and mother.
Eugenio Barba	Italian theatre director and author famous for his innovative productions.
Luciano Benetton	Entrepreneur and President of Benetton SpA.
Georges Blanc	French. Owner/chef of a world-leading three-star Michelin restaurant that bears his name in Vonnas, France.
Oriol Bohigas	Spanish architect. Rebuilt Barcelona for the recent Olympic Games in what may have been the biggest urban-planning project of the century.

Jan Carlzon	President of the Scandinavian Airlines. One of the most innovative leaders of a service enterprise of our times.
Dennis Conner	American yachtsman. Skipper of Americas' Cup winning team.
Ivo Cramér	Swedish choreographer and founder of the Cramér Ballet. Famed for his restoration of "lost" ballets.
Robert de Castella	Australian athlete. World record holder 1981-1984. Sports consultant and director of the Australian Institute of sports.
Lindsay Fox	Successful Australian entrepreneur building one of the country's largest transport companies. Started the project "Work for Australia" which created 25,000 jobs for young unemployed Australians in 1992.
Kjell Fredheim	Norwegian. Executive Vice-President, Chief Operating Officer, Scandinavian Airlines System.
Paulo Freire	Brazilian educator famous for his method of alphabetization and self-discovery. Former Secretary of Education to the City of São Paulo.
Valery Gergiev	Russian. Artistic Director and Principal Conductor of the Kirov Theatre. Maestro of Russian opera.
Michel Guérard	French founder of nouvelle cuisine. Owner/chef of three-star Michelin restaurant at Eugénie-les-Bains.
William E. Heinecke	American born, naturalized Thai who started his own business while still at high school and made it into a 150 million dollar conglomerate.
Masanari Iketani	CEO of Tokyo Steel. Asian CEO of the year.
Mariss Jansons	Conductor of the Oslo Symphony Orchestra. Developed a mediocre orchestra to be considered among the five best in the world. A world-leading interpreter of Tchaikovsky.
Cheong Choong Kong	CEO of Singapore Airlines.
Tom Lasorda	Manager and coach for the Los Angeles Dodgers Baseball Team for the last 16 years. Known for several outstanding achievements during this period.
Lars Löfgren	Managing and Artistic Director of the Royal Swedish Dramatic Theatre. Famous for his participative and motivating leadership style. Says Ingmar Bergman of him: "The best theatre director ever, myself included. He's simply the best" (*Akademikern*).
Fumihiko Maki	Japan's greatest living architect. Works include the Tokyo metropolitan gymnasium and Tepia, home of MITI.
Wilma Mankiller	Principal in Chief of the American Indian Cherokee Nation.
M.P. Narayanan	Indian. Formerly Chairman of Coal India with 700,000 employees. Currently Chairman of the Environmental Appraisal Committee of the Government of India, adviser RPG Enterprises which turns over more than 2 billion US$ a year in the energy sphere.
Curt R. Nicolin	A legendary Swedish industrialist, former chairman of Asea Brown Boveri and the Scandinavian Airlines System.
Arne Næss	Norwegian. Successful businessman and a legendary mountain climber/expedition leader (Mount Everest 1985 and many others).

Jorma Ollila	Finnish. President and CEO of Nokia Oy.
William G. Pagonis	Commanding General 21st Theater Army Support Command of the US Nato logistical forces in Europe. Directed logistics for Operation Desert Storm.
Anand Panyarachun	Former Prime Minister of Thailand (until September 1992). Common view that he did exceptionally well as Prime Minister. Highly respected. Ambassador to UN, USA, Canada, Federal Republic of Germany 1967-1978. Top executive in several of the biggest corporations in Thailand. Decorated.
Leoh Ming Pei	American architect. Responsible for the creation of a series of world famous buildings, including the Pyramide at the Louvre.
Esa-Pekka Salonen	Brilliant young Finnish conductor. Recently named Director of the Los Angeles Philharmonic.
Ricardo Semler	Brazilian businessman and author famous for his unorthodox management practices. The youngest ever Vice-President of the São Paulo Federation of Industries and elected Brazilian Leader of the Year in 1990.
Robert Shaw	American. CEO of Shaw Industries. Nominated as one of the five most admired leaders in the USA (*Fortune*, February 1993).
Dick Smith	Australian adventurer, entrepreneur, publisher, pilot and business leader. Founded an electronics company for $630 and sold it in the beginning of the 1980s when they had a yearly profit of $10 million. Founded the successful Australia's Geographical Magazine, *GEO*. The first man to fly solo around the world in a helicopter.
Bert-Olof Svanholm	President and CEO of Asea Brown Boveri, Sweden.
Mike H. Walsh	CEO of Tenneco, a giant Houston conglomerate. Successfully turned around Tenneco and previously Union Pacific Railways.