Using Awareness of Brain Sidedness to Build More Effective Teams

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USING AWARENESS OF BRAIN SIDEDNESS TO BUILD MORE EFFECTIVE TEAMS

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Many educators have long known that individual differences tend to interfere with the cooperative effort so vital to high performance in organizations. In his extensive research on the nature of high performing systems, Vaill (1980) has frequently returned to the issue of individual differences. One possible way such differences can interfere with effectiveness is that people tend to be uncomfortable with those who are different. Frequently, people fail to recognize that individual differences can be complementary and lead to a better result. One means of helping to achieve synergy and high performance in organizations would be to reduce the interference effects connected with individual differences. Vaill describes this concept as "joint optimization."

At the Defense Systems Management College (DSMC), Fort Belvoir, Virginia, we have initiated a program to help managers from the Department of Defense and the defense industries learn more about the nature of individual differences and how to negotiate and use those differences effectively. Teambuilding and using related concepts from the behavioral sciences has been an area of emphasis in our course for program managers for several years. Classes of approximately 200 students with management experience ranging from five to 15 years are divided into six-person work/study groups. The case method is used and the students are challenged as groups to solve the problems imbedded in the cases. Thus, team effectiveness and high performance becomes an important objective to the highly competitive students who tend to be high achievers and ambitious for career progression. On the premise that organization dysfunction and loss of synergy is often caused by the failure to understand and effectively use individual differences, we have begun to explore a new form of teambuilding, and we are encouraged with our initial results.

In the remainder of this article, I propose to provide some brief background information on individual differences in brain dominance, to describe the process of the teambuilding effort, and finally to present our findings and draw some tentative conclusions.

Individual Brain Dominance Differences

From the research conducted principally during the past 30 years, we have learned much about the human brain which helps to account for individual differences. The concept of the triune brain (Figure 1) developed by Paul McLean helps us to understand the evolutionary development of the human brain. Sperry's (1977) experiments with brain damaged and epileptic patients revealed that the human brain is structured into two separate hemispheres (a left and a right) which are connected by a switchboard mechanism

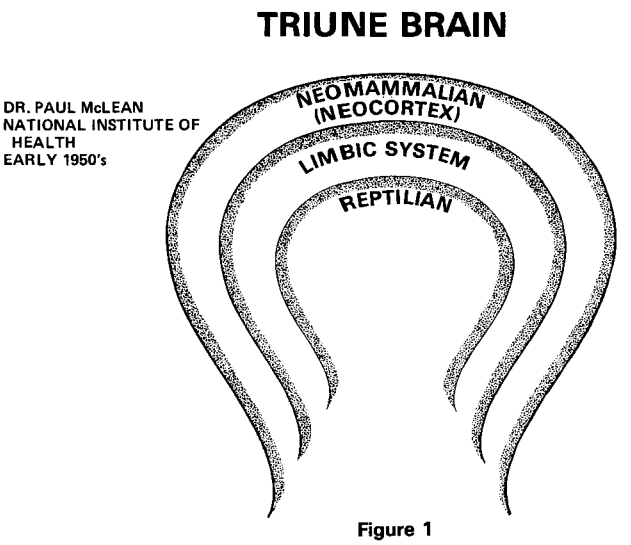

Figure 1

referred to as the corpus callosum through which electrical impulses pass from one side of the brain to the other. In his experiments, Sperry found that the two sides of the brain function differently from each other. The left side performs the rational, logical, sequential, arithmetic, linear, routinized functions. Further, the left side is the seat of our verbal capabilities and operates very conservatively to avert risk. Conversely, the right side is intuitive, spatial, holistic, creative, can build patterns from a few sketchy details, and takes risks easily. Our capacity to visualize and fantasize resides on the right side of our brain and the right side characteristically searches for meanings (Figure 2).

BRAIN RESPONSE TO TERM — DANCE

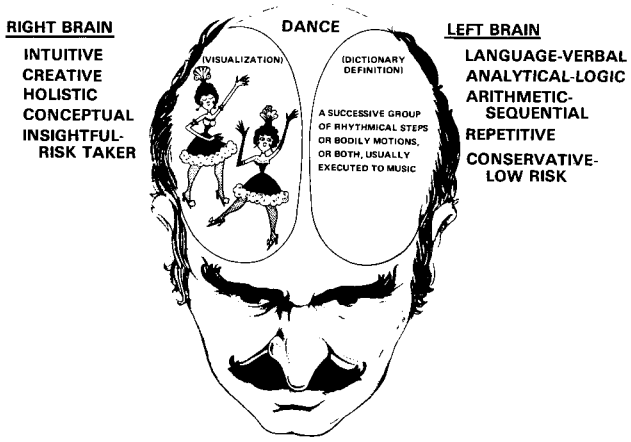

Figure 2

Ornstein's (1975) work has provided further support to the idea that distinctly different modes of thought are conducted in the brain's right and left hemispheres. Moreover, Ornstein has studied the cultural differences concerning individual tendencies to use one side more than the other. In the western culture, the development of science and technology (supported by our societal values) has produced an educational system where emphasis is almost exclusively on the left hemisphere functions of reading, writing, arithmetic, science, and scientific applications. In a sense, our highly developed, high technology culture stands as a monument to the development of our left hemisphere capabilities. Many thoughtful writers, notably Lindblom (1959), Ackoff (1974), Kuhn (1970), Adams (1979), Barrett (1979), and Feyerabend (1980) have pointed to the dangers of over emphasizing the rational approach.

For effective problem solving and decision making, both sides of the brain are vital and complementary. An unchecked bias on the left side can lead to overlooking context and premature bounding and closure of problems. The right side can compensate through its capacity for flexibility, risk taking, dealing with complexity, and attention to context and patterns. On the other hand, the rich intuitive content of the right brain needs the rational capabilities of the left side to articulate and translate into action.

Where, then, do these research findings and scholarly suggestions lead us? On an individual level, perhaps we need to become more aware of how we use the two sides of the brain and to increase the functioning of a neglected side, if we find one. Given increased awareness of individual tendencies and preferences for using one side of the brain versus the other, we may become better able to formulate and manage learning and work groups. At the organization level, we might seek to improve human resource management. Awareness is the key to unlocking these potential benefits.

The work of Ned Herrmann (1981), Manager of Management Education for General Electric, located at GE's Management Development Institute at Crotenville, has provided us an important forward step toward increased awareness of individual brain dominance. Combining the findings of McLean and Sperry, Herrmann has theorized that the limbic system of the brain, like the more advanced cerebral portion, is also divided into right and left hemispheres which led him to a quadrant view of the brain and brain dominance patterns (Figure 3). Influenced by the work of Ornstein, Mintzberg, and others, Herrmann has conducted research which began with General Electric managers and highly creative associates connected with his avocation as an artist. Encouraged by his early findings, Herrmann has expanded his research to a wide cross-section of individuals (although, to date, he has worked principally with Americans).

Herrmann's research has led to the design of a survey instrument which reveals an individual's brain dominance pattern. Data is collected in the following areas:

- Biographical, education and occupational data
- Handedness
- Best/worst school subjects
- Performance of tasks
- Self-descriptive adjectives
- Hobbies
- Energy level
- Motion sickness
- Extroversion/introversion

Tendencies and preferences become apparent along four dimensions: cerebral left and right and limbic left and right. Reflecting the bias toward the left side of the western culture, most individual members of business and government organizations show strong tendencies toward the left side dimensions both cerebral

and limbic indicating preferences for logical, analytic, mathematical, technical, controlled, conservative, planning, organizing, and administrative functions. However, individual differences abound in the organizations Herrmann has surveyed with some members demonstrating more balanced double dominant tendencies and others a clear preference for right brained functioning. Intrigued with the potential of Herrmann's instrument serving as a vehicle for increased self-awareness and teambuilding around individual differences, we initiated a brain dominance project at the Defense Systems Management College.

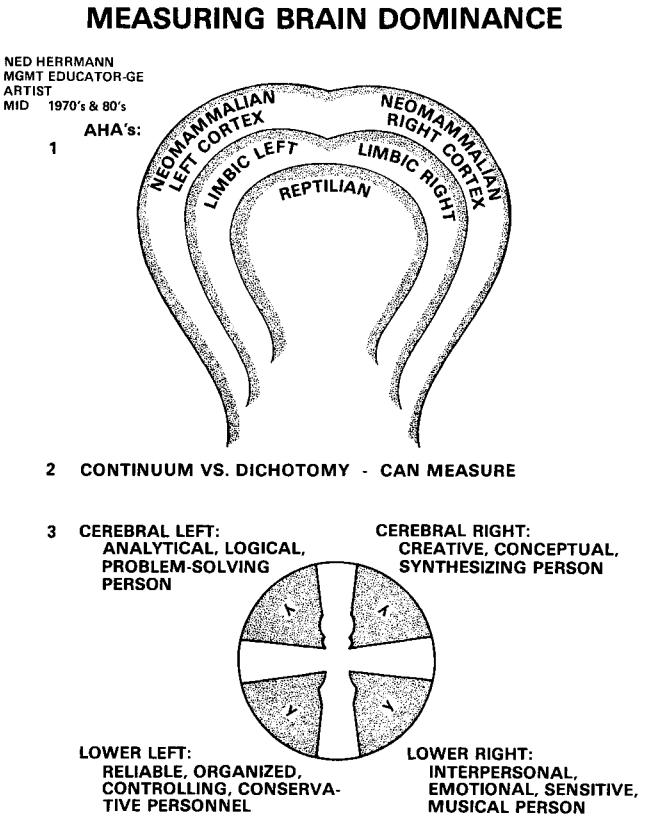

Figure 3

Use of Brain Dominance Differences in Teambuilding

In our effort to facilitate teambuilding for the class of approximately 200 student/managers, we followed a five-step process:

1. Administer the Herrmann Brain Dominance Survey
2. Provide relevant background and concepts through lecture-discussion
3. Feedback results and implications of individual and group patterns
4. Facilitate teambuilding around results
5. Follow-up

We provided only a brief introduction to the administration of the survey instrument. Our principal objective was to motivate the students as to the potential value of the survey in terms of providing an opportunity for increased self-awareness. We suggested they respond as spontaneously and candidly as possible to provide a valid view of themselves. We intentionally withheld disclosing the rationale behind the survey and the implications of the patterns which might emerge.

After the survey was collected, we engaged in a lecture-discussion session which highlighted the background and research which lead to the development of the survey and the potential applications for personal, education, and organizational use. The high levels of student interest and enthusiasm led to lively discussions which overflowed into after-class sessions and follow-on classes.

The interpretation and scoring of each individual survey is a manual and quite lengthy process. When the scoring was completed, feedback sessions were held. Each student was provided his individual brain dominance profile which was derived from the survey data along with explanations of the implications and significance of the patterns. We followed the individual feedback with discussion of activities, exercises, and programs which could be considered by individuals who wished to alter their patterns — particularly to increase the functioning of the right brain.

To facilitate teambuilding, we next provided the students the opportunity to break into their six-person work/study groups (the membership of which was fixed for the entire 20 weeks of the course) to discuss their individual brain dominance patterns and the composite patterns which they found in their groups. We suggested that they might wish to engage in a reality check (the extent to which individual patterns derived from the survey agreed with observations of other members) and to consider how the resources of the group could be best employed to provide a whole-brained approach to group problem solving. This was the initial step in a series of teambuilding sessions, both planned and unplanned, which seemed to lead to increasingly greater levels of trust within the work/study groups.

Once again the discussions were exceptionally lively with openness and sharing of perceptions, views, and feelings increasing exponentially as the discussions continued. The excitement and enthusiasm surrounding the teambuilding sessions was similar to what we have experienced in previous classes using the Myers-Briggs Type Indicator results as the basis for work group discussion and considerably greater than our

experience using the Johari Window survey as the discussion vehicle. We followed-up the initial team-building sessions with periodic sessions with the entire class, with separate work groups, and with individual students to help to clarify the experiential learning which was occurring through the work group problem-solving exercises, their reflections on the implications and effects of brain dominance, and the relevant communication which was occurring among the students on a continuous basis.

Four students were sufficiently stimulated to voluntarily engage in research on brain dominance over and above an already demanding curriculum and workload. Working in pairs, they investigated (1) *Brain Dominance and Group Performance* and (2) *Correlations among Results of the Herrmann Brain Dominance Survey, the Myers-Briggs Type Indicator, and the Kolb Learning Style Survey.* (Results of those studies are available by writing the author.)

Findings

As mentioned earlier, we found high levels of student interest and enthusiasm resulting from the application of Herrmann Brain Dominance Survey. The students on a virtually continuous basis made special efforts to seek out faculty members in and out of class to discuss their learnings and pose questions. The power of self-awareness was overwhelmingly evident. Many forty-year-old managers behaved as though a light had just been turned on in terms of explaining themselves to themselves. They were excited by the new insights. Many wanted to share the excitement with loved ones and asked for their wives and children to be included in the surveys. The excitement of self-awareness extended to being able to account for differences between self and others. There was great enthusiasm within the work groups concerning the new found capacity to discuss perceived differences in behavior among the team members in the language of brain dominance. Trust levels were elevated. Other evidence of positive student response was apparent in the large numbers of cartoons and articles dealing with brain dominance which students would clip, circulate and post on bulletin boards. Moreover, both formal and informal critiques provided to the College administration commended the brain dominance teambuilding program.

From the faculty point of view, we saw a decided upswing in student performance compared to previous classes. Much greater cohesion in the work/study groups was observed as students organized, communicated, socialized, and exhibited pride in their identities as groups to a far greater degree than seen at the College previously. A good example exists in the consensus seeking exercise, *NASA on the Moon,* used for each class. This exercise examines the effect of group synergy. (The degree of synergy achieved is measured by the improvement of the group score over the average of the individual scores and also by the extent to which the group score is better than the best single individual score.) The synergy achievement for the class which teambuilt around brain dominance differences was considerably higher than previous classes.

Another example of improved team performance was observed in the series of case studies which are used to integrate the curriculum. The faculty found substantially improved teamwork and problem-solving effectiveness during those case study exercises compared to past classes. While many other behavioral examples could be cited which suggest improved teamwork, I must mention one other signal we received from our "brain dominance" class — increased creativity.

Without precedent and without faculty encouragement, the students produced a chronicle of key events occurring during the course. Cleverly conceived and professionally produced, the chronicle stands in testimony to "whole brained" achievement. Creative, right-brained humor was articulately translated into action — a left brain function.

Conclusions

Our experience conducting teambuilding around the notion of brain dominance differences suggests that powerful benefits may be gained. It appears that feedback to individuals on their brain dominance patterns has some of the unfreezing effects which Lewin (1957) has said must precede change. Moreover, the sharing of individual patterns by members of assigned groups seems to improve levels of trust and reduce individual defenses, thus increasing the likelihood of greater group cohesion and high performance.

While we did not conduct a controlled experiment, we are encouraged and plan to continue the brain dominance teambuilding with subsequent classes and to seek opportunities for application in the field of defense acquisition. Our experience has produced the kind of high performance results that all managers would like to have. At the same time, caution is warranted concerning potential difficulties. For example, while we saw no evidence in this case, there is danger that individuals might stereotype themselves and act in more limited ways than before.

Those interested in conducting exploratory projects should contact Ned Herrmann, Laurel Drive, Fairfield Mountains, Lake Lure, North Carolina 28746 for information on workshops to certify instruc-

tors to administer and score the survey. Presently, the survey does not enjoy the simplicity of allowing the student to score it; however, automated self-scoring is a likely future option.

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