



ESSAYS

The Power of Mind: What if the Game Is Bigger Than We Think?

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This essay invites you to entertain the possibility that our current ideas about the human mind and its supposed limitations may themselves be limited. What if organizational realities were more malleable than we believe? What if organizational members could alter their physical surroundings even just occasionally through focused mental attention? We review evidence from numerous fields suggesting that the human mind may be capable of affecting physical reality from a distance and into the past and the future. Although not all studies have provided universal support, the evidence for the impact of focused mental attention is sufficiently compelling and the potential implications sufficiently important that we believe it is time to explicitly examine the organizational implications of the power of the human mind.

Keywords: *focused mental attention; collective mind; nonlocal influence*

A binary generator, a type of electronic coin flipper, produced random heads or tails signals that were recorded on cassettes. During later research sessions, participants listened through headphones to the tapes and perceived the heads or tails signals as clicks in their right or left ears. Participants were told to focus their attention on increasing the percentage of clicks heard in one of their ears (e.g., to generate an excess number of heads beyond the level that could be expected by chance alone). In fact, they were asked to affect the prerecorded output of the microelectronic random events generator (REG). The

results showed that participants were successful with odds against chance being 100:1 (Schmidt, 1987).

In another investigation, Byrd (1988) studied the therapeutic effects of prayerful mental attention on patients in a coronary care unit. During a period of 10 months, 393 patients admitted to the coronary care unit were randomly assigned to conditions. An analysis of the preintervention data showed no significant differences between conditions. However, multivariate analysis of outcome variables separated the groups in the predicted directions ($p < .0001$), with significantly fewer prayer-treated than control partici-

pants developing pneumonia, experiencing cardio-pulmonary arrest or congestive heart failure, or requiring diuretics, intubation or ventilation, or antibiotics. In addition, those targeted for focused mental attention had significantly lower severity scores during their hospitalization ($p < .01$).

These are examples of evidence from numerous fields suggesting that through focused mental attention (FMA) the human mind may be capable of affecting physical reality from a distance and into the past and the future (Dossey, 1999). Although not all studies have provided universal support, the evidence for the nonlocal impact of FMA is sufficiently compelling and the potential implications sufficiently important that we believe it is time to explicitly examine the organizational implications of the power of the human mind.

The aim of this essay is to engage the reader in toying with the possibility that our current ideas about the human mind and its supposed limitations may themselves be limited. What if organizational realities were more malleable than we believe? What if organizational members could alter their physical surroundings even just occasionally through FMA?

The perspective we develop in this essay is not entirely new, nor is it entirely familiar. Researchers in fields ranging across physics, botany, and medicine have begun to note evidence of the ability to alter reality through the application of diverse forms of FMA including imaging, praying, concentrating, willing, visualizing, wishing, directed thinking, and intending. Seeking scientific terms for resulting events, researchers have called them by names as diverse as *anomalous cognition*, *anomalous perturbations*, *distant manifestations of consciousness*, the result of *distant intentionality*, or *nonlocal mind* (Dossey, 1996, 1999).

"Discovery commences with the awareness of anomaly . . . it then continues with a more or less extended exploration of the area of anomaly . . . it closes only when the paradigm theory has been adjusted so that the anomalous has become the expected" (Kuhn, 1970, pp. 52-53). Anomalies are potentially interesting as a starting point on the road to discovery. Too often we view them as mere exceptions and focus our attention on business as usual. Anomalies associated with nonlocal causality from diverse fields, however, suggest that something more than mere exceptions may be occurring. The game may be bigger than we think.

The following two scenarios depict thinly disguised prior client relationships of one of the authors.

They illustrate potentially important anomalies that traditional theories cannot easily explain. Current theories are not wrong; however, they may be incomplete. Consistent with this view, our aim is not to displace our current organizational theories. It is rather to introduce a perspective that enriches, extends, and more fully specifies what we already know.

A TALE OF TWO ORGANIZATIONS

The Miraculous Start-up

Jack was amazed that his friend, the eminent surgeon Dr. Harry Bryant, really wanted him to be the administrator for his new ambulatory clinic. Jack knew he was well trained academically and a member of the same social circles as Harry. They had friends in common. However, his prior management experience was long ago, had been in manufacturing versus health care, and he had no ready investment funds.

Harry continued to paint a detailed, rosy picture of the future, saying he could see it all clearly. The building in which he had rented space would soon be finished. Funded by profits from his last two successful, loosely related ventures, along with unasked-for loans and investment money from mutual friends who were believers in Harry's golden touch, Jack was assured that all the cash needed was already available. Spurred on by an almost magical belief in Harry's ability to replicate his prior series of successes, Jack joined the fledgling venture. His mildly nagging concerns regarding his own capabilities, the lack of a well-defined line of services to be delivered, the initial absence of qualified staff workers to deliver them, and the failure to date to identify specific sources of patient revenues all paled each time he listened to Harry's detailed, optimistic tales of the future.

I will have my father join us, bringing his distinctive chiropractic skills to the venture. Our friend Meg is also excited about coming on board. She has been enrolling people from a local training center for years, really knows how to sell, and I can show her everything she needs to know about health care to generate revenue dollars for our educational programs and clinical services.

Similar answers were provided each time a potential barrier was mentioned. Harry loved to tell tales of the bright future before them. For example, he stated,

A year from now we will have so much business we won't know what to do with it all. People will be flocking to us to be treated compassionately as family members in our home. We will have our choice of the best physicians, the best staff, and the best patients. We will provide a living demonstration of what is possible if one believes, cares, and is willing to provide real value for others. And we will get rich quickly as a byproduct.

Much of what Harry said proved to be true. When the doors opened, many of the original staff members came from their mutual circle of friends who seemed to deeply trust Harry, have faith in his dream, and believe in the power of focusing together to produce desired results. Although many of them were not originally well trained in the world of ambulatory services, they all had one thing in common—a conviction that anything was possible if you set your mind to it. As business expanded, new people were added often more for their attitudes than for their demonstrated history of technical competence. Much time and money was invested in training. In addition to joyously working long, long hours to make what was soon adopted as their dream a reality, staff members came in early to be part of weekly meetings in which everyone focused their attention on closing deals, the health of patients, monthly cash flow goals, as well as the successful achievement of personal goals shared intimately by each of the participants. When people met in the hall, they excitedly shared success stories that had occurred or they were sure were about to occur. They also frequently reminded each other to remain focused on desired outcomes until results were officially announced, jokingly noting, "It ain't over until it's over." Educational seminars for patients were run in the evening, and even Dr. Bryant and the two young surgeons who had recently joined the group willingly arrived early to help by setting up chairs, delivering presentations, and being with the family physicians, past patients, and potential customers who came to benefit from these free community contributions.

At first, highly successful surgeons were hard to attract to the medical staff. After all, why would they give up being treated as distinctively special to join this egalitarian wonderland? The idea of coming to seminars, sharing menial tasks, and being available to talk with potential customers did not sit well with their beliefs about the way they should be treated or the way a clinic should be run. Over time, however, this pattern began to change. Within the first 6 months,

the center was actually profitable, and one highly successful, well-known community surgeon was drawn to join the clinic staff by the emotional closeness of the people, her desire to be part of the common cause that excited them, and the chance to learn more about their beliefs in the powers of the mind. Given her reputation, a more credible message about what was happening at the surgery center began to spread. People began to hear that the clinic was making money, which was shared with the people producing the results.

Other aspects of the venture were less credible. Some of the things that the clinic staff talked about and their belief in their ability to affect the future through focusing their attention together on intended outcomes seemed a bit strange. For example, nonclinic staff members believed they could affect the results of surgeries occurring in their clinic and the recovery of patients after the surgeries were completed through their focused thoughts and prayers. All in all, however, attitudes at the clinic were infectious; more surgeons, staff members, and patients were drawn in, word of the successes spread in the community, and the clinic expanded into larger quarters several times within the first 2 years. For many who scoffed at the naiveté of the true believers, the results seemed to be an impossible dream that was actually coming true.

The Sure Thing That Wasn't

Dr. Kevin Perry was sure he knew a good thing when he saw it. Two years ago when he became a partner in a year-old ambulatory surgery center, it looked like nothing could go wrong. The new facilities were beautiful and the technology the finest in his region. His partners were clearly the best and brightest surgeons in the city, having graduated from the finest medical schools, completed the most respected residencies, and were known for their successful independent practices. The quality of the medical staff was not surprising given that physicians had been asked to join the group based on their exceptional technical skills and prestigious reputations.

Furthermore, conditions in the community clearly supported the success of the venture. Advantageously skewed reimbursement rates and the availability of capital from willing sources provided an exciting basis for optimism. In addition, an ample staff and respectful administrative team promised that Kevin and the other surgeons could focus their attention on what was really important without being burdened by

menial details. For example, before joining the group he had heard that meetings seldom occurred and when they did they were not well attended. After all, surgeons simply did not have time for relationship-building sessions, outcome measurement planning, or a detailed discussion of financial statements. Being great surgeons was what counted. Obviously, they delivered high-quality care, and their time was too valuable to be anywhere other than in the operating room or relaxing with their families or friends.

Fortunately, Kevin was not expected to spend much time at the center when not in surgery. Between his cases, however, he frequently heard bickering among the other surgeons, who seemed to think that a bit more care could be taken in providing for their parking needs, instrument preferences, and case-scheduling requirements. Their exceptionally high compensation packages, while initially a source of satisfaction, no longer seemed sufficient. Given the large support staff that had been hired to cater to their needs, the level of dissatisfaction among the partners truly was surprising. Things had gotten bad enough recently that three of the original surgeons, while still loosely affiliated with the group, had actually left to set up their own facility.

In fact, several of the partners were beginning to believe that the administrators, as well paid as they were, just could not seem to get their job done. The staff was often moody, and it seemed like somebody was always quitting, spreading bad rumors in the community, and having to be replaced. And then there was the disturbing talk of financial losses, banker discomfort with the six-figure debt that had been incurred to have the finest facilities and newest technologies (which were clearly required to remain on the leading edge), possible restrictive regulatory and reimbursement changes, and the fact that a recent audit resulted in the need to restate the group's already surprisingly poor financial results. Although the bookkeeper had been fired immediately in response to these concerns, Kevin noticed that he, like others, was becoming confused and skeptical about the future of this highly promising venture.

Although each of these case examples might be explained retrospectively by a selective application of traditional management thinking (e.g., goal setting or team building), the results seemed counterintuitive to people who watched them unfold. Traditional success factors (e.g., resource availability and reputation) suggested that the odds were clearly stacked in favor of the second venture, which ultimately failed. After all,

the second surgery center attracted to it the acknowledged skill leaders in the community, had access to the resources required to buy the best technology and facilities available, provided the compensation needed to attract an already proven staff, had an outstanding reputation from the beginning that attracted payers and patients, and freed the surgeons to spend their time productively on revenue-generating operations. Certainly current thinking in fields such as selection, training, and strategy would suggest that these factors gave them a significant advantage relative to the first center. Although the first clinic had one person with a demonstrated history of success in two previous tangentially related ventures, its financing was somewhat more limited, technology and facilities were substantially more constrained, and initial staff members had little going for them other than the common dream, emotional bonding, and possibly irrational beliefs.

The success of the first surgery center as well as the failure of the second might be written off as nothing exceptional when placed in a context of leadership theories that stress the importance of common purpose, vision, and goals (Collins, 2001; Collins & Porras, 1984). However, such explanations may leave partially unexplained the full measure of power of a common mental focus on a set of results. The presence of such a focus, along with a leader who articulates the target, certainly can provide a mechanism for focusing behaviors, thereby enacting desired-for results. However, is the game larger than this? We believe that the time has come to develop a deeper understanding of a more direct means by which mental energy may affect results. Evidence from studies conducted across diverse fields provides a useful perspective for beginning to uncover and explore a more direct impact of the human mind.

NONLOCAL EFFECTS OF FMA

Local sensing is far more limited than the actual capacity of our human minds (Radin, Rebman, & Cross, 1996). Einstein put the futility of relying on our senses into perspective when he said,

Up to the Twentieth Century, reality was everything humans could touch, smell, see, and hear. Since the initial publication of the chart of the electromagnetic spectrum, humans have learned that what they can touch, smell, see, and hear is less than one millionth of reality. (as quoted in Schwerin, 1998, p. 17)

Yet it is this miniscule portion of reality that we continue to rely on in most of our research.

We turn next to the power of that which we cannot touch, smell, see, or hear. After reviewing examples of the diverse evidence regarding nonlocal effects, we revisit the two scenarios above and provide potential explanations of the results based on a FMA perspective. Because of space limitations, we summarize only a limited number of representative studies assessing the nonlocal effects of human FMA. For more complete surveys of existing studies, please see Benor (1990), Braud (2000), Dossey (1999), and Radin and Nelson (1989).

Research on Nonlocal Spatial Effects

A number of research studies suggest that FMA can have effects that transcend space. Consistent with this, the physicist John Bell's (1964) theorem offers mathematical proof that any reality that is compatible with quantum mechanics must be nonlocal; that is, it must allow the possibility that outcomes at distant locations can be correlated in ways that are incompatible with currently understood physical mechanisms. The implication of this theorem and its follow-up experimental confirmations that do not rely on the validity of quantum mechanics (Aspect, Dalibard, & Roger, 1982; Clauser & Shimony, 1978) is that physical events are affected not simply by local influences but also by a vast array of distant occurrences. Because physical connections do not mediate nonlocal influences, they are instantaneous and not diminished by distance. "A non-local interaction is, in short, *unmediated, unmitigated, and immediate* [italics added]" (Herbert, 1985, p. 214). According to psychologist Paul Meel and philosopher Michael Scriven (1956), the case against the distant, nonlocal impact of the mind rests on the questionable assumptions that scientific knowledge is currently complete and that such phenomena are in conflict with it. Furthermore, physicist Henry Margenau argued,

Strangely, it does not seem possible to find the scientific laws or principles violated by the existence of [nonlocal causality]. We can find contradictions between [their occurrence] and our culturally accepted view of reality, but not—as many of us have believed—between [their occurrence] and the scientific laws that have been so laboriously developed. (quoted in LeShan, 1987, p. 118)

Although some physicists have argued that quantum effects break down as objects get larger, others disagree. For example, some researchers have conducted studies that probe the hazy border between classical large and quantum small objects and presented results suggesting that the laws of quantum mechanics extend to larger objects than previously believed (Seife, 2001). The sampling of studies briefly reviewed below also suggests that nonlocal effects across short and long distances may occur in the reality of large objects as well as at the quantum level.

Short-distance nonlocal effects of FMA have been shown to occur when the participant and target are in generally the same area (e.g., in the same room). For example, years ago researchers conducted experiments testing the degree to which the human mind across short distances can affect the growth of microbes such as yeast cells and bacteria. Results indicate that the growth of microbes was either retarded or enhanced as intended in the FMA conditions compared with the control conditions (e.g., Haraldsson & Thorsteinsson, 1973; Nash, 1982).

Similar patterns of results have been observed when the participant and target are not in the same geographic region (e.g., not in the same city). The REG studies, one of which we described in our introduction, demonstrated the nonlocal spatial influence of FMA. Focusing attention on skewing REG outputs from the opposite sides of the earth produced results that were just as reliable and robust as those created locally (Dunne & Jahn, 1992). The strength of these nonlocal effects increased as more individuals focused on the same target (Dossey, 1999; Dunne, 1991; Radin et al., 1996). In addition, emotionally bonded couples had a larger impact on REG outcomes than individual participants acting alone (Jahn & Dunne, 1987). It would appear, therefore, that the number of people acting together and emotional closeness among them potentially strengthens the nonlocal influence of individual minds acting alone.

In a more recent study, 990 patients admitted to a coronary care unit were randomly assigned to FMA and control groups. Individuals who had never met them focused on patients daily for 4 weeks. The intervention group had better chart review scores, although there were no differences in length of stay in the hospital (Harris et al., 1999).

A double-blind experiment utilized randomized clinical trials to study the impact of long-distance healing intentions on the health of patients with AIDS.

The work employed 40 patients with AIDS and 40 volunteers. Each volunteer focused mental attention on a patient's health 1 hour a day, 6 days a week, for 10 weeks. A different volunteer treated each patient each week. Each patient received standard medical care and was unaware of distant healing intentions. At the end of a 6-month period, the patients receiving FMA had significantly fewer new AIDS-related illnesses, had less severe illnesses, required fewer doctor visits, fewer hospitalizations, and fewer days of hospitalization (Sicher, Targ, Smith, & Moore, 1998).

Not all studies of the nonlocal spatial effects of FMA have yielded statistically significant, positive results. For example, a study by Matthews, Conti, and Sireci (2001) of 95 dialysis patients found no support for the effects of focused attention. Similarly, a 2001 study investigating the impact of FMA on cardiovascular disease progression failed to demonstrate statistically significant effects on patient well-being (Aviles et al., 2001).

The general pattern of results observed in the literature provides some support for the nonlocal spatial effects of FMA, however. Benor (1990) and Radin, Machado, and Zangari (1998) have conducted meta-analyses of studies examining the influence of nonlocal FMA. Their outcomes support the contention that FMA is significantly associated with predicted shifts in objectively measured activities. Another more recent review of 23 trials involving 2,774 patients involved in randomized studies with adequate controls published in peer review journals concluded that approximately 57% of the trials showed positive effects of FMA, leading the authors to conclude that the evidence merited further study (Astin, Harkness, & Ernst, 2000).

Research on Nonlocal Temporal Effects

A large body of replicated experimental research also suggests that the mind can have effects that transcend time into the past and future. The possibility of influencing events in the past is particularly hard to grasp, given the perspective of normal science. Fortunately, the research we review does not suggest that FMA can alter what has already occurred and been observed. Rather, it suggests that the past is often not fixed and holds multiple possibilities. Consistent with Heisenberg's (1927) uncertainty principle, it is possible that an entity's attributes are not fully real but exist

in an attenuated state until observation promotes some attribute to full reality status (Herbert, 1985).

Below we briefly summarize a sampling of studies of nonlocal temporal effects of FMA (forward and backward in time). For example, Grad's early work (1965) placed nonlocal mind on a scientific footing by opening the work to experimentation that could be quantified and reproduced (Dossey, 1999). In each of three forward-focused experiments, seeds exposed to more positive mental-emotional attention grew better over time than untreated controls or than seeds exposed to more negative attention. In a backward-focused study, autonomic activity was recorded, but unobserved, until after influence attempts were made 2 months later. Results were significant in the predicted direction ($p < .02$) (Radin et al., 1998).

A large body of work examining the forward and backward effects of FMA has been conducted at the Princeton Engineering Anomalies Research (PEAR) lab at Princeton University. PEAR was founded in the 1970s by Princeton's former dean of engineering Robert Jahn to examine whether an individual might be able to affect the function of sensitive electronic devices. The REG study described at the beginning of this essay is part of literally millions of trials in which individuals have tried to mentally influence some physical phenomenon in nonlocal time. The results indicate with remarkable consistency that the FMA of participants can influence outcomes in the external world. Specifically, the outcomes of microelectronic generators have been reliably changed beyond levels of statistical chance by the attention that participants exerted either before or after the generator results were created and recorded (Radin & Nelson, 1989).

Researchers associated with numerous other institutions have reported similar patterns of results. Radin and Nelson (1989), for example, reported a meta-analysis of 832 studies from 68 different researchers involving the influence of human FMA on microelectronic systems. Their work provides remarkable evidence supporting the influence of FMA on apparently random events. Statistical psychologist Hans Eysenk (Eysenk & Sargent, 1982) provided another indication of the reliability of the early REG experiments. He stated that the likelihood of the results being due to chance was several million to one.

Finally, summarizing the work of others, Braud (2000) presented a meta-analysis of 233 experimental sessions in which participants attempted to retroactively influence outcomes in a variety of living sys-

tems. The combined set of results was calculated to be highly significant ($p < .00000032$). The author concluded that

because changes in prerecorded events do not take place in the absence of the later intentional (intervention) aims (as confirmed through direct comparisons with non-influenced, control periods), a claim for a form of causation or influence of the events by the intentions (beyond mere correlation) seems justified. (Braud, 2000, p. 44)

In sum, the overall pattern of outcomes in research on nonlocal temporal effects has produced results that are difficult to simply ignore, despite the existence of some inconsistent and nonsignificant findings.

Summary

Before moving to the potential implications of this research for explaining the events in our two organizational scenarios, we summarize the key findings. First, a number of the studies reviewed above suggest that the effects of FMA may transcend the constraints of time and space (Dunne & Jahn, 1992). FMA may affect outcomes before and after an event has seemingly occurred and may act as powerfully at a distance as it does nearby.

Second, some of the evidence also suggests that the impact of FMA appears to be stronger as more people are focused on a common object, creating coherence in the group (Radin et al., 1996). It seems likely that if people in a group are attending to different things, the collective FMA approaches zero, with individual focus creating background noise and potentially decreasing the impact that any group member could have alone. In contrast, as more people focus on the same object, they may increase the potential impact of their collective FMA.

Third, the evidence also suggests that the nonlocal effects of collective FMA seem to strengthen as people in the collective are more emotionally bonded (Dossey, 1999; Dunne, 1991). Targ and Katra (1998) argued that

Rapport [is] . . . paramount. . . Commonality of purpose and mutual trust are essential prerequisites . . . such agreement and coherence among individuals . . . can be attained whenever people surrender their individual identities and join their minds together, focusing their attention on creating a common goal . . . the trust and rapport can then be quickly achieved. (pp. 81-82)

IMPLICATIONS FOR PRACTICE

To what extent can we generalize from the empirical evidence presented above to organizational practice? The nonlocal evidence we reviewed suggests a number of novel and somewhat nontraditional explanations that may help us better understand what occurred in the case settings we described above. First, it suggests the value of selecting employees based on historically demonstrated commitment to applying FMA in their personal and professional lives, not simply based on their job-relevant, trainable skills. Second, it points to the importance of having people throughout the organization bonded together in their focused support for achieving outcomes not directly relevant to their own particular areas of expertise, in addition to the successful performance of their individual jobs. And finally, it suggests the relevance of planning, not strictly as a future-oriented activity but also as one that may have important retrospective functions. In other words, attention may need to be focused on critical planned results even after all relevant behaviors have been carried out (e.g., bids or proposals have been submitted) but before outcomes have been observed or announced.

Within a FMA perspective, the case scenarios might be seen as examples of either pulling together or pulling apart. In the first case, the leader, Dr. Harry Bryant, pulled his people together by creating, articulating, and continuing to build support for his description of future possibilities. He initially attracted emotionally bonded friends who further deepened their sense of relationship through intimate sharing of personal goals, focusing together on patient well-being and organizational outcomes, as well as excited storytelling regarding past successes and successes to come. Although they may have initially lacked management and staff experience relevant to the venture, the enthusiastic mutual application of their beliefs in FMA along with their pursuit of common objectives aided in attracting others to join their cause as well as in deepening support for their success among like-minded friends in the community.

The defocused bickering evident in the second case depicts a distinctively different reality. Although starting with significant advantages flowing from top-notch abilities, state-of-the-art technology, extraordinary facilities, and exceptional reputations, little basis existed for noticing the need to either focus or work together. Self-centered agendas pulled people apart in different directions. Because individuals concentrated

on their separate needs, their diverse agendas often offset each other minimizing their collective FMA to something approximating zero. As a collection of formerly successful competitors pulled together by their greed for even greater individual attainment, little understanding of the need for jointly focusing on a common cause existed in the group. In addition, limited external community support existed for their success. Envy of prior accomplishments, combined with the flow of negative rumors and accusatory stories, made it easy for people to root against the group and its members.

We are not suggesting that superior skills, technology, or facilities are unimportant. Resources central to success, however, may extend beyond the variables currently evident in our management theories, thus allowing us to account for greater variance in our research outcomes. Nor are we arguing that behavioral teamwork is not important to enduring success. However, people working hard together may not provide a full explanation for the success evident in the first case. Consistent with the pattern of FMA findings reviewed above, the intense focusing of mental energy among numerous, emotionally bonded people may also play a role in the distinctive pattern of results evident in their organization. Although these two cases are in no way proof of the value of such FMA, the contrasting patterns are highly consistent with the experimental results from the diverse fields reviewed above.

The managerial implications of the FMA perspective described above appear relevant to diverse organizational settings, ranging from start-up entrepreneurial ventures (such as those presented in our case scenarios) to large multi-identity organizations consisting of professional and administrative components, such as universities and health systems. For example, when conflicting physician and administrator perspectives manifest themselves in separate groups pulling in distinct directions, the benefits of a large, bonded team focusing its mental attention on common objectives are lost. Effective coordination is unlikely, and mental energies pulling in separate directions are likely to offset each other. Investments in effective leadership and team-building skills, along with clear and specific goals, therefore seem critical to the successful application of FMA.

The importance of collective focus for enhancing organizational outcomes is hardly new. Collins and Porras (1994) and others have discussed the importance of alignment as a means of coordinating behaviors. And the benefits of people's broad understand-

ing of the big picture that goes beyond their specific job have also long been apparent. The primary emphasis of these extant perspectives regarding people alignment, however, has been on their effects on employee motivation and behavior; that is, alignment of activities and broad understanding of the organization are thought to enhance coordination and joint action. The nonlocal effects of collective FMA we propose are consistent with, but add another dimension to, our understanding of the potential effects of collective alignment. In addition to providing an explanation for the likely behavioral changes, the proposed perspective suggests the possibility that collective FMA may also have a further nonlocal, unmediated, and immediate impact on outcomes.

A social constructionist perspective (Berger & Luckmann, 1967) implies a similar view of reality as malleable and fluid. It describes reality as socially constructed through patterned actions that, over time, people take for granted as their reality. The proposed nonlocal perspective is consistent with the view that realities are malleable. Beyond the enactment of reality through patterned action, however, is the human mind capable of a more direct impact on reality?

IMPLICATIONS FOR FUTURE RESEARCH

To conceive of a nonlocal perspective of space and time is to accept that the human mind is capable of transcending the more limited views that dominate our current research. Embracing this perspective requires that we be willing to look beyond the ideas that we have built from the sensory perspective of our bodies. Our culturally accepted view of reality provides a set of guiding beliefs about how the universe works. In the United States, our worldview is shaped by traditional classical physics as described in the 17th century by Sir Isaac Newton: Time flows, much like a river, in a single direction. When something has happened, it cannot be redone; and causes always precede effects.

Local sensations, however, may simply be the way in which our bodies have learned to order incoming information. The language we use helps distort our sense of reality, especially regarding space and time. When we say "the past lies behind us" or "the future lies ahead of us," we are making time a prisoner of space by expressing duration as an extension in physical space. Our experiences and the way we language

them make it very hard to comprehend any other conception of time (Dossey, 1989).

The conceptualization of a world that includes nonobservable cause-effect linkages is consistent with prior positions from sources as diverse as philosophy and quantum physics. For example, Kant (1781) distinguished between appearances (i.e., facts of experience), reality (i.e., hidden causes behind these experiences), and theory (i.e., our stories about appearances and reality). Similarly, quantum theory allows for nonlocal connections to not only exist in theory but also to exist as observable phenomena (Herbert, 1985).

The costs of rejecting the possibility of nonlocal mental effects if they do, in fact, exist (a Type II error) could be high for organizational studies. A recent review of mental influence studies concluded that the observed nonlocal effects are typically small to medium in size (Braud, 2000). The actual percentage of events that have changed as a result of mental interventions has "ranged from a fraction of a percent to a few percent (in cases of random generator influences) to 4 percent or 8 percent (in certain electrodermal influence studies)" (Braud, 2000, p. 44). A review by Jones and Crawford (2003) suggested that although these effects exist, they may be somewhat smaller ranging from less than 1% for nonliving random systems, to larger effects on some living systems (e.g., autonomic nervous systems, skin conduciveness), to even larger impacts on pain and anxiety.

Small to medium effect sizes compare favorably with typical findings in more conventional behavioral and biomedical research and are "10 times as great as those obtained in some representative medical study outcomes that have been heralded as medical breakthroughs" (e.g., the effects of aspirin in reducing heart attacks; Braud, 2000, p. 42). Such results, if achieved in organizational settings, would be far from trivial. Organizations are facing increasing global competitive pressures. The ability to engage people in producing a competitive advantage that is initially not likely to be easily understood or imitated elsewhere may be of great value.

The possibility that time and space are not always as constraining as we have traditionally understood them to be may, in fact, hold interesting research implications. We will mention only several in closing. First, as researchers we may need to question our assumptions about the existence of clearly distinct levels of analysis in organizations and organizational

studies. If we accept the existence of nonlocal effects, the individual mind may operate as part of a field in addition to operating as an individual unit. Through emotional bonding, this field appears to be strengthened. Our traditional means of measuring levels of analysis does not encompass this possibility.

Second, we may also need to look again at the critical role we play as researchers in shaping the reality that we study. Long ago, experimenter bias research suggested that scientists often unintentionally influence their observed outcomes (Rosenthal & Rosnow, 1969). Consistent with this concern, current atomic science has even gone beyond the notion of any fixed reality existing out there. There is not strictly an object and an observer, but the joining of the two in an observation (Dossey, 1989). Placebo or halo effects do not adequately explain the impact observation may have on the object of research. We need to pay closer attention to how we interact with our data.

Finally, a FMA perspective suggests that we revisit current assumptions about managerial freedom of choice. Although strategic choice theories assume more freedom of choice than deterministic models of organization (Child, 1972), even the former may be much more limited than the potential power of FMA. Our proposed nonlocal perspective, on one hand, suggests that the strategic choice perspective holds a somewhat limited concept of freedom of the will, as it implies relatively isolated individual decision makers situated in the here and now. Freedom of the will may, in fact, be much larger than we have believed, seemingly tied to an endless chain of events extending temporally far into the past and future and spatially in an indefinitely large expanse. On the other hand, freedom of the will may be much more restricted than we have believed. If an organization does not engage people in collectively focusing attention on critical outcomes, more focused competitors may severely restrict that organization's freedom of choice.

Naturally, the possibilities we have presented need to be debated, refined, and thoroughly tested. We have presented two contrasting cases as illustrations of how FMA may be a key to understanding seemingly anomalous results. Tests of FMA might initially be conducted under highly controlled conditions in a lab setting. For example, a selected group of emotionally bonded people could be instructed to focus attention on a particular business outcome, and their results might be compared to the results of other less focused

and less bonded groups. Alternatively, a business simulation might provide a context for comparing results achieved by FMA groups and controls.

Beyond these applications, a number of questions remain to be addressed if we are to understand the nature of the nonlocal forces proposed in this essay. For example, although the research support for nonlocal influences appears intriguing, we have noted that not all studies have provided supportive results. Such replication failures are not unusual or unexpected in areas that are being freshly explored. They do, however, raise interesting questions regarding the boundary conditions under which FMA can be most profitably employed.

A variety of additional questions demand research attention. For example, what are the most effective mental influence strategies? Are there particular times (e.g., venture formation or radical change) when individuals and organizations are particularly unstable and therefore open to the impact of FMA? What deeper theoretical insights can we, as a field, develop about what underlies reliably observed FMA effects? And, possibly most interesting, what are the implications of nonlocal outcomes for our current understanding of individual and organizational time and space?

There is much about nonlocal effects that we do not fully understand. We should not let that stop us from looking at the evidence and examining the potential for maximizing what we see in organizations and organizational research. As Richard Feynman, a Nobel laureate, once said,

I think it is safe to say that no one understands quantum mechanics. Do not keep saying to yourself, if you can possibly avoid it, "but how can it be like that?" because you will go "down the drain" into a blind alley from which nobody has yet escaped. Nobody knows how it can be like that. (as quoted in Herbert, 1985, p. xii)

Although the nonlocal perspective we proposed suggests that we rethink a number of current approaches to the study of organizations, it does not negate any of them. Rather, it implies the need to expand them to include nonlocal as well as local explanations for observed phenomena and results. To quote Stanford University neurophysiologist Karl Pribram, one of the architects of our current understanding of the brain:

It isn't that the world of appearances is wrong; it isn't that there aren't objects out there, at one level of reality. It's that if you penetrate through and look at the universe with a . . . holographic system, you arrive at a different view, a different reality. And that other reality can explain things that have hitherto remained inexplicable scientifically. (as quoted in Schwerin, 1998, p. 20)

The game may be bigger than we think. We need to expand the boundaries of where we go to look for answers to hitherto inexplicable organizational questions.

REFERENCES

- Aspect, A., Dalibard, J., & Roger, G. (1982). Experimental test of Bell's inequality using time-varying analyzers. *Physical Review Letters*, *49*, 1804-1807.
- Astin, J. A., Harkness, B., & Ernst, E. (2000). The efficacy of "distinct healing": A systematic review of randomized trials. *Annals of Internal Medicine*, *132*, 903-910.
- Aviles, J. M., Whelan, E., Hernke, D. A., Williams, B. A., Kenny, K. E., O'Fallon, M., et al. (2001). Intercessory prayer and cardiovascular disease progression in a coronary care unit population: A randomized controlled trial. *Mayo Clinic Proceedings*, *76*, 1192-1198.
- Bell, J. (1964). On the Einstein-Podolsky-Rosen paradox. *Physics*, *1*, 195-200.
- Benor, D. J. (1990). Survey of spiritual healing research. *Complementary Medical Research*, *4*(3), 9-33.
- Berger, P. L., & Luckmann, T. (1967). *The social construction of reality*. New York: Doubleday Anchor.
- Braud, W. (2000). Wellness implications of retroactive intentional influences: Exploring an outrageous hypothesis. *Alternative Therapies*, *6*, 37-48.
- Byrd, R. C. (1988). Positive therapeutic effects of intercessory prayer in a coronary care unit population. *Southern Medical Journal*, *81*, 829.
- Child, J. (1972). Organization structure, environment and performance: The role of strategic choice. *Sociology*, *6*, 1-22.
- Clauser, J., & Shimony, A. (1978). Bell's theorem: Experimental tests and implications. *Reports on Progress in Physics*, *41*, 1881-1927.
- Collins, J. C. (2001). *Good to great*. New York: HarperBusiness.
- Collins, J. C., & Porras, J. I. (1994). *Built to last: Successful habits of visionary companies*. New York: HarperCollins.
- Dossey, L. (1996). Guest column: Distance, time, and nonlocal mind: Dare we speak of the implications? *Journal of Scientific Exploration*, *10*(3), 401-409.
- Dossey, L. (1989). *Recovering the soul*. New York: Bantam Books.
- Dossey, L. (1999). *Reinventing medicine: Beyond mind-body to a new era of healing*. San Francisco: HarperCollins.
- Dunne, B. J. (1991). Co-operator experiments with an REG device. Technical Note PEAR 91005. *Princeton Engi-*

- neering *Anomalies Research*. Princeton, NJ: Princeton University.
- Dunne, B. J., & Jahn, R. G. (1992). Experiments in remote human/machine interaction. *Journal of Scientific Exploration*, 6, 311.
- Eysenk, H., & Sargent, C. (1982). *Explaining the unexplained*. London: Weidenfeld & Nicolson.
- Grad, B. R. (1965). Some biological effects of laying-on of hands: A review of experiments with animals and plants. *Journal of the American Society for Psychical Research*, 59, 95-127.
- Haraldsson, E., & Thorsteinsson, T. (1973). Psychokinetic effects on yeast: An exploration experiment. In W. E. Roll, R. L. Morris, & J. D. Morris (Eds.), *Research in parapsychology* (pp. 20-21). Metuchen, NJ: Scarecrow Press.
- Harris, W. S., Gowda, M., Kolb, J. W., Strychacz, C. P., Vacek, J. L., Jones, P. G., et al. (1999). A randomized, controlled trial of the effects of remote intercessory prayer on outcomes in patients admitted to the coronary care unit. *Archives of Internal Medicine*, 159, 2273-2278.
- Herbert, N. (1985). *Quantum reality*. Garden City, NY: Anchor Press/Doubleday.
- Jahn, R. G., & Dunne, B. J. (1987). *Margins of reality*. New York: Harcourt Brace Jovanovich.
- Jones, W. B., & Crawford, C. C. (2003, March/April). Science and spiritual healing: A critical review of spiritual healing, "energy," and internationality. *Alternative Therapies*, 9, 56-61.
- Kant, I. (1781). *Critique of pure reason* (J. M. Meiklejohn, Trans.). Amherst, NY: Prometheus Books.
- Kuhn, T. S. (1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- LeShan, L. (1987). *The science of the paranormal*. Northamptonshire, UK: Aquarian Press.
- Matthews, W. J., Conti, J. M., & Sireci, S. G. (2001, September/October). The effects of intercessory prayer, positive visualization, and expectancy on the well-being of kidney dialysis patients. *Alternative Therapies*, 7, 42-52.
- Meel, P. E., & Scriven, M. (1956). Compatibility of science and ESP. *Science*, 123, 14-15.
- Nash, C. B. (1982). Psychokinetic control of bacterial growth. *Journal of the American Society for Psychical Research*, 51, 217-221.
- Radin, D. I., Machado, F., & Zangari, W. (1998). Effects of distant healing intention through time and space: Two exploratory studies. *Proceedings of Presented Papers: The 41st Annual Convention of the Parapsychological Association* (pp. 143-161). Halifax, Nova Scotia, Canada: Parapsychological Association.
- Radin, D. I., & Nelson, R. (1989). Consciousness-related effects in random physical systems. *Foundations of Physics*, 19, 1499-1514.
- Radin, D. I., Rebman, J. M., & Cross, M. P. (1996). Anomalous organization of random events by group consciousness: Two exploratory experiments. *Journal of Scientific Exploration*, 10(1), 143-168.
- Rosenthal, R., & Rosnow, R. (Eds.). (1969). *Artifact in behavioral research*. New York: Academic Press.
- Schmidt, H. (1987). The strange properties of psychokinesis. *Journal of Scientific Exploration*, 1, 103-118.
- Schwerin, D. A. (1998). *Conscious capitalism: Principles for prosperity*. Boston: Butterworth-Heinemann.
- Seife, C. (2001, May 22). Microscopic weirdness expands its turf. *Science*, 292, 1471.
- Sicher, F., Targ, E., Smith, H. S., & Moore, D. (1998). A randomized double-blind study of the effect of distant healing in a population with advanced AIDS: Report of a small-scale study. *Western Journal of Medicine*, 169(6), 356-363.
- Targ, R., & Katra, J. (1998). *Miracles of mind: Exploring non-local consciousness and spiritual healing*. Novato, CA: New World Library.

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