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Brain Science and the Tasks of the Manager

Ego and empathy—the two great drivers of business—come from distinct sets of elements in our brains. Excellent business performance requires using the two sets effectively together. And a simple discipline can help.

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Today, society expects managers to do more than seems humanly possible: to maximize shareholder value, but also to take care of the earth, their workers, and their communities. Fortunately, there is solid scientific knowledge that can help us unify our efforts to improve performance – knowledge from brain science. People and companies can make enormous steps toward the performance we need today by understanding a bit about how our brains function and leveraging that knowledge in management. Doing so can help us excel at two very different kinds of work driven by two different sets of elements in the brain, and balance the two kinds with consistency.

The first kind of work is the more obvious: the pursuit of self-interest – your own and your allies'. We all pursue our self-interests almost all the time because our brains are wired that way. Ancient human brain elements (believed more than 300 million-years-old) resemble elements in the brains of the fish, amphibians, and early reptiles. These animals are (or were) extremely self-interested. When they reproduce, they lay eggs, fertilize them, and then leave their young alone, with seemingly little empathy or love. The elements we share with these creatures drive self-interested behavior. Because such elements are crucial to how our brains operate, any human scheme that neglects our pursuit of self-interest is fighting 300 million years of history. [i]

However, all human beings have to do another kind of work, too, because humans are not just self-interested. We are mammals, and unlike fish, amphibians, and most reptiles, mammals have modified or newer areas of our brains that are specialized for taking care of families. These areas drive empathy of all kinds and perform key roles in affectionate behavior and related emotions.[ii] Additional, much newer elements in our brains (and those of other primates) leverage the more ancient elements to give us social drives and abilities. Because of them, primates have for millions of years had the ability to relate to each other in complex extended-family groups.

These additional brain elements enable us – indeed require us – to care for others through empathy and vision based on empathy. In our work lives, we

respond to immediate feelings for others and we create and implement longer-term efforts to achieve larger, empathy-driven goals (from fixing bureaucratic snafus that hurt people to introducing products that we believe will solve others' problems). Only the worst sociopath's brain allows him or her to focus exclusively on self-interest. So, everyone in business has to do both kinds of work.

Self-interested elements and empathetic elements operate every minute of the day. Human success means using both together. Perhaps a few kinds of business depend overwhelmingly on one or the other (some kinds of securities trading, perhaps). But for almost all of us, success means knowing how to use them constantly together, for mundane efforts like managing deadlines as well as for planning and implementing grand long-term projects. Because both self-interested, egoistical elements and empathetic elements operate so constantly, understanding and deliberately managing them can help us do almost everything in business better.

Finding Natural Balance Can Drive Performance

The challenge for managers, and indeed, for people generally, is to use both sets effectively and harmoniously and thus become whole people, using our entire minds and hearts. Neuroscience suggests this is possible and extremely desirable. Whole human beings can pursue and build their lives around both their own self-interest and zealous efforts to create genuine contributions for others. But to learn to do both kinds of work together as our natures demand, we have to overcome our tendency to fall out of balance under stress.

Our brains are composed of imperfectly integrated elements (Table 1). The ancient self-interested vertebrate elements and the empathetic core mammalian elements are governed by an "executive program" in the newest elements of our brain. These new elements, located in neo(new) cortexes (also known as isocortexes), give us most of our cognitive abilities. The "executive program" in the neocortex coordinates the self-interested and empathetic elements (and much else besides). It includes elements to promote balance between self-interest and empathy that work much like our built-in mechanisms regulating blood pressure and how much we eat.[iii]

However, just as stress can throw off our blood pressure, it can make balanced pursuit of self-interest and others' interest difficult.[iv] This happens constantly in business. So just when all stakeholders would most benefit from the full use of our faculties, our self-interest drives may take over and we get angry or wrapped up in a goal. Or, equally costly, we become overly focused on addressing needs of someone we serve. We can work so hard on hearing what the boss wants and delivering it that we fail to engage our self-interest circuits and consider whether the boss' desire is really what's best in the long run. Because so many of us don't know how to use our brains' elements effectively together, we experience excess stress, perform worse, and contribute inadequately to society. The challenge

is to work on both self-interest and others' interest together, using the two fundamental sources of human motivation in harmony.

Managing for More Success with Less Stress

To achieve full performance, then, we need to understand how self-interest and empathy brain circuits often conflict but are capable of working together. Understanding this can help us move toward harmony and effectiveness.

All behavior produces some tension in our brains because all behavior involves different elements of the brain pushing in different directions. Some activities, for instance, gathering data, negotiating cooperatively, and working together for a shared goal, involve fairly equal mixtures of self-interested and other-interested actions. They can allow people to find a comfortable dynamic balance. Other activities are predominantly self-interested or other-interested:

- Autocratic, angry, or attacking behavior (e.g., yelling at someone) is extremely self-interested.
- Directing or competing with others – or working methodically to achieve a goal – typically involves mostly self-interested but also some other-interested brain circuits.
- On the other hand, ingratiating yourself with someone or pleading – say, begging the boss not to give you an assignment you will hate – is overwhelming dominated by other-interested circuits.
- Encouraging, supporting, or generously giving to someone else are moderately other-interested, but some self-interested circuits are involved.

Since we all have a built-in tendency toward balance, you can probably name someone you admire who regularly achieves it without reference to neuroscience. Indeed, wherever an outstanding leader's work has been carefully documented, it seems the leader is unusually empathetic, unusually strong in self-interested action, and able to move from self-interest to empathy and back easily, achieving remarkable balance over time.

Take Bill Hewlett and David Packard, who built Hewlett-Packard Corp. into a company that is almost universally seen as the foundation of Silicon Valley. They changed the world. They not only built a great company, but also led in creation of standards that allowed Silicon Valley products to talk to each other, invented company-wide profit sharing, and pioneered employee health insurance. Their strength in <u>both</u> self-interest <u>and</u> caring were legendary, as was the way they balanced the two. Sometimes it seems difficult to find anyone over the age of 50 in Silicon Valley who does <u>not</u> have stories of Bill and/or Dave's competitive, innovative drive, of their care for others, and of how well they achieved each without sacrificing the other.[v]

The Conflict Spectrum (Figure 1) can help surface the actions of the two fundamental motivating sets of brain elements in business life and help us to strengthen, manage, and balance them. Zone 1 on the far right is the zone of extreme self-interest; Zone 5 on the far left is the zone of extreme other-interest. Zone 3, in the middle, is the zone of dynamic balance. In the figure, examples of behavior are indicated for each zone. The figure allows us to identify which set of elements dominates a situation and suggests kinds of actions that might bring balance. Paying attention to the Spectrum, we can pursue balance and work on strengthening both our ego-oriented and empathetic abilities. Not everybody needs the Conflict Spectrum. Those with Hewlett or Packard's gifts may need the Spectrum only for training others. But most businesspeople need a discipline to help them pursue long-run self-interest and their empathetic visions effectively. The Conflict Spectrum can be a good start.

The process of using the Spectrum is simple, but sometimes subtle and always challenging. Behavior in each sector of the Conflict Spectrum has vital purposes. Naturally, you will sometimes compete assertively and sometimes focus on hearing and encouraging others. In a lifetime there are times to be in Zone 1, aggressively attacking, or Zone 5, giving all in empathy for a young person. The challenge is to do each when needed and do it well, and to use the Spectrum to achieve balance over time. Balance over time causes the tensions that episodes outside Zone 3 produce to be relieved by activities that use the opposite set of brain circuits.

The discipline starts with simply looking at your behavior or the behavior in your unit. Where does it fall (or tend to fall) in the Spectrum? Then you ensure that the reciprocal of that behavior – the behavior on the other side of the Spectrum – also occurs.

If your organization is competing and pushing to win (for instance, a unit of an investment bank that is struggling to close deals), top people will be doing a great deal of directing of internal staff, interspersed with episodes of ingratiating themselves with people outside the organization from whom they need specific contributions (environmental approvals, perhaps). Tension will rise, especially if the leaders do not take time to interact empathetically and staff members feel they cannot express their own real self-interest. The team will perform better if it thinks continually of the reciprocal of the behavior that naturally dominates – for example, if the leaders think of encouraging, responding, and supporting the staff. And after a push to close a deal, leaders need to find ways to use their caring brain elements for the group and followers need opportunities to bring self-interest needs forward.

Ernest Shackleton, the Antarctic explorer, set a good example of this. Shackleton led an Antarctic expedition in 1914 whose ship was crushed in polar ice and sunk. After the reasonably successful but obviously very self-interest-driven evacuation of the ship as it broke up in the ice, Shackleton seized on the discovery of a fresh deck of playing cards in the limited stores that had been removed. He spent

hours in the cold tents engaging empathetically with his men as he taught the entire crew how to play the card game contract bridge (useful knowledge for the boring days ahead). After all 28 men had emerged alive from nearly two years in the cold, much of that time living in tents and eating seals and penguins, one of his men called him "the greatest leader that ever came on God's earth, bar none."[vi]

Where a unit spends its time serving customers or regulators with some servility, the Conflict Spectrum helps us remember to ensure people also get to pursue their own desires. This is often a subtle task. Leaders need to structure systems so self-interested and empathy-oriented behavior are balanced over time and each day look for opportunities to balance self-interested and empathetic activity.

These principles are more powerful than they may seem. They can help with difficult business challenges including but not limited to:

- **Asserting authority.** Senior executives know they need both empathy and passion for performance. But this is challenging. Good leaders must sometimes drive performance from the self-interest side of the Spectrum. When this is necessary, you need to manage self-interest and empathy consciously over the medium term. Track where your current behavior is on the Conflict Spectrum. When you have either insisted on performance or united the group in aggressive competition against, the quality of the empathetic behavior you show afterwards is likely to determine your long-term reputation. Figure out the empathetic tasks that really need doing, and complement the competitive drive by doing them.
- **Competition inside the company**. Contenders for top jobs must often act in intensely self-interested modes. However, for the competition to benefit the company, leaders need to use the Conflict Spectrum (or instincts that point in the same direction) to ensure balance on several levels. Episodes of self-interest dominated competition need to be balanced with genuinely empathetic activities ranging from sharing war stories to relaxing at parties. Leaders need to work empathetically with each person on the team. The firm needs to evaluate contenders on abilities to operate in each sector of the Spectrum.
- **Deadline pressure**. On deadline, the boss typically contributes to stress by pressing toward the finish. But how the boss presses does a lot to determine long-term performance. Deliberately manage where your efforts fall on the Conflict Spectrum. On deadline, more can be can done in Zone 3 (dynamic balance) – reasonable, collaborative negotiation – than managers tend to realize. And although sometimes requirements must simply be set, the setting of requirements (Zone 2) can be balanced by encouragement and support (Zone 4). Using the Conflict Spectrum is a solid way to ensure people are treated like people.

The sidebar "The Conflict Spectrum in Action: Coping with Crisis" details how the Conflict Spectrum can help a team cope with the stress of a layoff.

Effectively Using Our Real Nature

So the evidence clearly suggests we can improve both our performance on traditional measures and our contribution to others by consciously drawing on both self-interest and our caring nature all the time.

Today most business gurus do not seem to understand the importance of strength in both self-interest and caring and of continually balancing the two. On one hand, scholars of economics, finance, and strategic management focus overwhelmingly on self-interest and neglect caring. On the other, leadership teachers who urge caring, empathetic vision say little about self-interest and give no sense of how to manage "the bottom line" day-to-day.

However, many company examples suggest that firms as well as individual managers do best when they pursue the same kind of balance that our instincts encourage us towards as individuals. They do better for their owners and also for everyone else. For instance, many companies must compete aggressively and do so continuously – steel companies, for example. However, in the U.S. it is well known that the most successful U.S. steel-maker, Nucor, is also one of the most careful in attaining internal balance within the organization. Despite the cyclicality of the steel business, Nucor never lays off staff and assures employees that they can appeal any grievance first to the general manager level and then to headquarters.[vii] This and many other balanced ways of what social scientists have come to call "high performance work systems" have contributed to Nucor's phenomenal success – a 35-fold increase in stock-market value since 1980. Comparable examples of companies that profit from a balanced approach to human life in business have been seen in furniture (IKEA), pharmaceuticals (Johnson & Johnson), airlines (Virgin Atlantic), coffee shops (Starbucks), coatings (3M), and many other industries. Leaders in these companies have created systems that balance profit demands with on-going empathy for needs of employees, customers, and society. In doing so, they've increased performance, profits, and social contribution.

We can summarize how strength and balance typically emerge throughout organizations with three rules – really three steps that can, with hard work, bring a manager, a team, and then a larger human system into touch with its real human nature:

1) Bring forward the vision that flows from your own real nature. Over your lifetime, you have developed your own vision of your personal self-interests and your own personal kinds of empathy for others. In low-stress situations, they work together, giving you at least a partial vision of how you want to live and care for others.

In business and other high-stress situations, however, this natural vision typically gets overwhelmed. In using the Conflict Spectrum or any other approach to achieving a balance between self-interest and empathy in business life, you are seeking to bring that vision, or a more powerful version suitable for business, back to the center.

Major business successes begin this way. Jamseti Tata founded the Tata Group in India in 1868, for instance, not so much as a way of making money as an expression of his deeply felt Indian nationalism. His vision was that Indians would operate Indian textile mills, steel plants, and electric power generators. The latter two ventures were not launched in his lifetime, but the vision really did animate his companies, and the balance between profitable growth and service to his nation remains a hallmark of the Tata Group today. Similar examples in the West are well-known, such as Robert Wood Johnson's drafting of Johnson & Johnson's famous "Credo," which states the firm's "first responsibility is to the doctors, nurses, and patients, to mothers, fathers, and all others who use our products and services." The credo articulates a balanced approach. Partially as a result, Johnson & Johnson has achieved outstanding long-term performance (76 consecutive years of sales increases!). Not everyone needs to be as explicit as Tata and Johnson, but everyone has to find the naturally balanced vision that exists within them.

2) Learn to relate to the whole human nature of people. Based on that full vision, utilize the Conflict Spectrum (or simply your own instincts) to work with others using both the self-interested and the other-interested parts of your brain. This is a matter of learning to connect with people in their entirety. The profound challenge – the one that Shackleton, Hewlett, and Packard fulfilled so well – is to use fully and be deeply in touch with both the self-interested elements and the empathetic elements of others' brains.

Even non-human managers need to do this to be successful. Primate studies show chimpanzees managing other chimpanzees have to develop both self-interest and empathy and balance the two. When a chimpanzee serves as "alpha male" – the quintessential macho position that inspired Tarzan movies and innumerable theories about males' need to fight for dominance – achieving balance between self-interest and empathy is essential. If somehow a chimpanzee without the right empathy gains the alpha role, he is unlikely to gain all the role's perks. For instance, the primatologist Frans De Waal tracked a young male whom researchers named Nikkie. He became alpha with help from a much older and somewhat weaker male, Yeroen. Nikkie often failed to make empathic decisions in carrying out the alpha-male task of arbitrating disputes in the colony. He almost always took the side of the stronger party. As a result, the colony refused to accept him as arbitrator. Members regularly turned to the aging, lower-ranked Yeroen for dispute resolution and actually wound up giving submissive "greetings" to Yeroen far more often than to the higher-ranked Nikkie.[viii]

For people as well as chimpanzees, it's extraordinarily important to develop strong self-interest, strong caring, and – over time – a spirit that can be felt to be in balance between the two automatically. That's what the Conflict Spectrum helps you do. Similar balance has to be achieved between the organization and those around it, and the Conflict Spectrum can help there, too. Most company activities can be placed somewhere on the Conflict Spectrum, and the Spectrum can be used to analyze whether the firm is in or out of balance over all.

3) Create leverage through role modeling, story telling, and sharing of tools. Mobilizing self-interest and empathy together should not only help you as an individual manager but also strengthen the fabric of the whole human system. This means making it easy for everyone, and especially for all leaders, to feel, draw on, and achieve success through their own balanced human visions.

We don't advocate just rolling out waves of Conflict Spectrum seminars. You begin creation of a visionary organization with role-modeling and story-telling first. For instance, IKEA founder Ingvar Kamprad launched his company demonstrating frugality and style in his life as well as his products. Today though he's one of the world's richest men, he still models and encourages stories about frugality. He regularly shows that he enjoys flying coach, buying Christmas wrap at post-Christmas sales, and eating cheap meals at IKEA stores. Outsiders sometimes smell hypocrisy. Kamprad also enjoys his Swiss villa, his Swedish country estate, and his vineyard in Provence. But IKEA family members know that Kamprad's frugal-but-stylish activities are about a vision of value through low-cost. And they understand how this vision benefits everyone in the IKEA world. This kind of well-lived vision from a leader provides the foundation for balanced vision throughout IKEA.

Essential for Today

It is in firms with this kind of vision that tools like the Conflict Spectrum can help everyone find their own balance. Developing balanced abilities that support both self-interest and human caring enables us to mobilize our own best instincts and those of the people we work with, allowing our organizations to more fully leverage their talents. And doing that brings us several big steps closer to meeting the overwhelming demands on organizations today. It is fair to say that companies like IKEA, Tata, and Hewlett-Packard have managed, at least during significant periods of time, to meet the needs of both customers and employees. At least sometimes they also met the demands of the natural environment. And they did this by tapping into an instinctive understanding of our nature. Whatever your business problem, it is time to approach it as a whole human being. The Conflict Spectrum and a bit of understanding of brain science can help.

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Table 1

Brain Elements and the Unified Management of Human Systems

Our personalities have to unify the activities of these disparate sets of elements in our brains. Businesses succeed when they also address each of these elements in a unified way.

Elements	Emergence	Key Functions	Roles in Businesspeople's Behavior	Management Tasks
Brain stem and oldest elements of forebrain	More than 300 million years ago; shared with ancestral fish, amphibians, stem reptiles	Self-preservation / self-interest circuits	Foundation for competitiveness, wealth accumulation, power-seeking	Directing competitive self-interest toward larger goals
Elements of forebrain modified in emergence of first mammals; the "limbic system"	About 200 million years ago	Parental care and social bonding	Foundation for community-oriented behaviors: self sacrifice, giving	Inspiring organization and community engagement
Neocortex (isocortex)	Within last 10 million years	Higher brain functions: Works with older elements to create complex self- and socially oriented behaviors	Coordination, analysis, much creativity, work with any kind of complexity	Dynamically balancing the conflicting circuitries to achieve corporate goals.

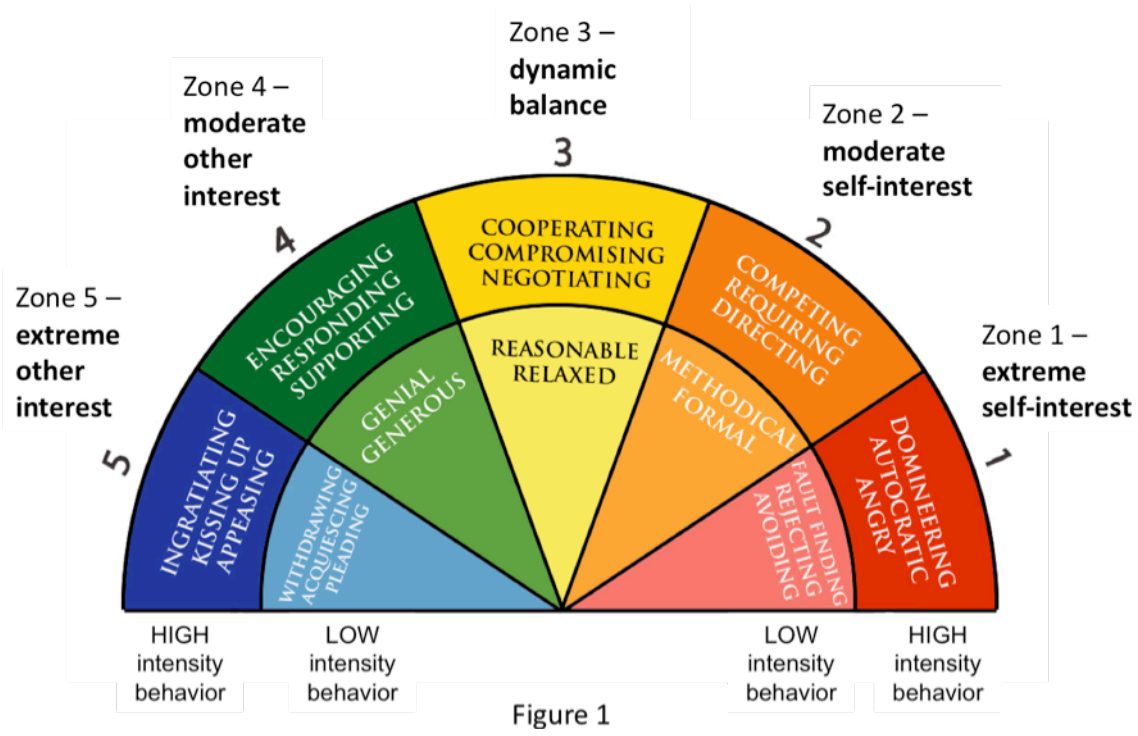

Figure 1

Figure 1- adapted from Gerald A. Cory, Jr. and Marie G. Kivley. 2010. The Green Handbook: How to Build a Successful Corporate Environment (and Save the Planet Too!). ITUgreen Press.

Optional Sidebar 1- **The Conflict Spectrum in Action – Coping with Crisis**

Employee morale today is low in much of the developed world. Layoffs, work/life imbalances, and fear stress our workforces. And this kind of stress makes people less productive.

In recession years, highly self-interested behavior such as laying off workers could almost be said to be the norm. But there has also been also highly community-driven behavior such as whole departments taking pay cuts to avoid layoffs. Both can damage growth. Eventually human nature will require balance. Companies that have decimated their workforces need to spend time supporting and nurturing. This is well known. But equally, companies counting themselves lucky because selfless workforces have taken pay cuts may find employees engaging in selfish actions because the employees feel they "deserve it."

The Conflict Spectrum can help managers leverage the potential of their workforces. The dynamic of the workplace can be easily thrown off – even by asking a worker to work late without compensation. But the problems of maximizing performance can usually be addressed without significant extra cost, and managers can learn to do it as part of a life that has less rather than more stress. A core element is to recognize when an action falls significantly to one side of the Conflict Spectrum and complement it with action on the other.

A crisis produces – often requires – behavior fairly far toward the extremes of the Spectrum. Laying people off is a long way from dynamic balance – on the self-interest side. Negotiating to save jobs involves emotional work equally far on the other side. You can utilize the Conflict Spectrum to achieve balance for the medium and long term:

1. After an action driven from the self-interested side, such as laying people off, be sure to share the emotional pain openly. You will certainly participate in the emotional pain regardless of whether you let people know that you do. However, many managers never let their team know that they are grieving, too, and this adds even more behavioral tension to the organization.

2. Find ways to show concern for the self-interest of people who have made sacrifices. You can't undo the sacrifices. The money isn't there. But in many cases you can show you're working for them, and this will bring the team back toward dynamic balance. You can emphasize limits to the sacrifices. (Cut unnecessary tasks from the work required of those whose pay has been reduced, if possible.) Seek ways to ease the self-interest pain. (If some employees will be particularly hard-hit – the ones with children in college, perhaps – can an existing benefit program be re-worked at low cost to address their needs?)

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[i] Some scientists refer to a group of brain elements that all reptiles, mammals, and birds share and that closely parallels elements in fish and amphibians and is central to our pursuit of self-interest as the "protoreptilian complex." These elements seem to have changed remarkably little since the complex emerged more than 300 million years ago, at an early stage in the emergence of reptiles (MacLean, P. (1990). The triune brain in evolution: Role in paleocerebral functions. New York: Plenum; Panksepp, J. (1998). Affective neuroscience. New York: Oxford.) The term "protoreptilian complex" is controversial. However, there is no controversy among biologists over the fact that we share core elements of our brains with early reptiles and other early vertebrates in our ancestral line and that these elements play key roles in such self-interested actions as food-seeking, self-defense, and sex. See Cory, G. A., Jr., & Gardner, R., Jr. (Eds.). (2002). Evolutionary neuroethology of Paul MacLean. Westport, CT: Praeger.

[ii] Numan, M., & Insel, T. R. (2003). The neurobiology of parental behavior. New York: Springer. Panksepp, op. sit. The elements involved in care-giving are often called the "limbic system," though not all scientists use this term.

Species quite different from us seem to have evolved caring behavior as well – birds and some modern reptiles such as crocodiles caring for their young, for example. So we are not discussing phenomena necessarily unique to mammals. However, brain structures of birds and other caring non-mammals differ from those of humans enough that they seem unlikely to help us understand neuroscience' contributions to management of human systems. Therefore, we focus exclusively on mammalian and especially primate brains here.

[iii] The emergence of techniques such as functional magnetic resonance imaging in the last two decades has spawned vast empirical literatures documenting the distinctive activities of various brain elements. For an account that deals largely with elements inherited from early vertebrates, see Dickhaut, J. and Rustichini, A. (2008). "Neuroeconomics," in Durlaf, S.N. and Blume, L.E., eds., The new Palgrave dictionary of economics. For an introduction focusing on mammalian elements, see Gazzaniga, M. S. (2005). The ethical brain. New York: Dana Foundation.

[iv] We have built-in a "homeostatic" tendency to balance self-interest and caring for others comparable to the built-in mechanisms that regulate blood pressure and eating. See Wilson, D.R. & Cory, G.A., Jr. (2007). The Evolutionary Epidemiology of Mania and Depression. (Lewiston, N.Y.: Edwin Mellen).

[v] See Malone, M.S. (2007). Bill & Dave. (New York: Portfolio.).

[vi] Lansing, A., (1959/2000). Endurance. New York: Carol & Graf; Morrell, M. & Capparell, S. (2001). Shackleton's Way: Leadership Lessons from the Great Antarctic Explorer. New York: Viking.

[vii] Govindarajan, Vijay. (2000). "Nucor Corporation (A)." Tuck School of Business at Dartmouth; Helman, Christopher. (2009, May 11). "Test of Mettle." Forbes 183(9): 81-82. For a discussion of "high performance work systems," an important concept that is relevant to Nucor, a manufacturer, see Appelbaum, Eileen, Thomas Bailey, Peter Berg, and Arne L. Kalleberg, eds. Manufacturing Advantage: Why High-Performance Work Systems Pay Off. Ithaca, NY: Cornell UP, 2000. (The high performance work system concept is a particular structural constellation that seems to leverage self-interest and other interest in manufacturing settings. Non-manufacturing firms must create their own approaches.)

[viii] de Waal, F. B. (2007). Chimpanzee politics: Power and sex among apes. Baltimore: Johns Hopkins University Press. (Original work published 1982). The story of Yeroen, Luit, Nikkie, and their community comes from this book. Elsewhere, in arguments that parallel some of those of this paper, de Waal suggests that primate studies show that, "Instead of human nature's being fundamentally brutal or fundamentally noble, it is both." (Good natured: The origins of right and wrong in humans and other animals. (Cambridge, Mass.: Harvard University Press, 1996:5)). See also de Waal, F. (2009). The age of empathy: nature's lessons for a kinder society. (New York: Harmony Books).