

COACHING *for* LEADERS

Bring Your Brian to Work: Using Cognitive Science to Get a Job, Do it Well, and Advance Your Career

by Art Markman

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Dave's Reading Highlights

If you leave behind the noun and move to a verb—succeed—everything changes. The primary function of verbs is to refer to actions. Success is a series of actions that culminate in achieving desired outcomes. It requires continual effort to improve. It involves growth that supports the transition from one position to another across the length of a career. Success demands the motivation to excel over a long time span. The same is true for other categories, such as leader and innovator. There are a few qualities that help someone succeed, lead, or innovate, but it is the process of working, rather than the qualities of the individual, that creates the most desirable outcomes.

A job is somewhat easier to define. The Bureau of Labor Statistics deems it an uninterrupted period of work for a particular employer. A position is a role that someone takes on for an employer. A person may hold many positions within an organization over a number of years, but a period of working for the same employer consists of one job. A survey by the Bureau of Labor Statistics released in 2015 looked at a subset of Baby Boomers born from 1957 to 1964. These people held an average of 11.7 jobs between the ages of eighteen and forty-eight. That means that the people in this survey changed

jobs, on average, every two to three years over the first thirty years they were in the workforce. That's a lot of movement. If anything, this trend is accelerating.

Your motivational brain is the set of mechanisms that get you to do something (or sometimes avoid doing something).

Your social brain is the collection of systems that help you deal with other people.

Your cognitive brain is the elaborate set of structures that permit you to communicate, make excellent snap judgments on the basis of your experience, and engage in complex reasoning.

Experts are best able to recall things from the past that may be useful for adapting to new circumstances. They can also imagine the outcome of a particular course of action, so they can judge well whether that action is likely to succeed. For this reason, it's important to expose yourself to many different situations in the workplace. It can be uncomfortable to do something unfamiliar, and the first time you try, you're likely to make plenty of mistakes. But the wider the range of things you have done, the more flexibly you'll be able to work in the future.

The regions deep in the brain don't have extensive connections to the areas of the cortex that control the social and cognitive brains. As a result, people have little ability to introspect about what drives their motivational system. Instead, the motivational brain communicates with the cognitive and social brains largely through feelings.

So where does this passion for work come from? There are two possibilities. One is that everybody has a relatively fixed set of interests, and someone's initial reaction to a job is a good predictor of that person's long-term love for the work. A second possibility is that people can learn to love almost any job. The advice to find your passion clearly assumes the first of these possibilities. You either love something or you don't, and if you're not excited about the work you're doing, you should seriously think about moving on. The reality

is more complicated. Research by Patricia Chen, Phoebe Ellsworth, and Norbert Schwarz finds that some people believe their passions are fixed. As a result, they make fast judgments about whether they like a particular profession. They are prone to leave jobs quickly and to change jobs often early in their careers until they find something they really enjoy. Other people believe they can learn to love almost any career. These individuals stick longer with their early jobs. Interestingly, both types of people are about equally happy with their careers in the long term.

Aligning your job with your values is important, because although you can learn to love the particular things you do for a job, it's hard to stay motivated when the organization's mission is inconsistent with what you value.

Value definitions Power: Control over people and resources, social status Achievement: Personal success (as defined by social standards) Hedonism: Pleasure, enjoyment, and self-gratification Stimulation: Excitement, pursuit of novelty and challenge Self-direction: Independence in thought and action; creativity Universalism: Tolerance, appreciation, and acceptance of all people and nature Benevolence: Helping others and protecting their welfare Conformity: Restraining actions and impulses to fit social norms Tradition: Respect for cultural customs, norms, and ideas Security: Safety and stability in self, society, and relationships

I spoke to many recruiters in the course of putting together this book, and every single one said that the biggest mistake an applicant can make is to be unfamiliar with the mission of the organization and unclear about what the job ad said.

Be aware of the presenter's paradox, a term coined in a paper by Kimberlee Weaver, Stephen Garcia, and Norbert Schwarz. These researchers point out that when figuring out how to present information about themselves, people tend to throw in every positive thing they can think of. Some of the achievements you highlight may be really great—such as winning an award in college or being recognized by a national panel of experts for an innovation. Others

may be good but not great—for instance, honorable mention in a pitch competition. When you're preparing your materials, you may assume that you'll be evaluated using an additive strategy. In other words, the people reading your application will add each accomplishment you present to your total goodness. If your application were being evaluated that way, even an honorable mention would increase the strength of it. But in fact people making evaluations average together the information they get. So three big achievements plus a few lesser accomplishments may actually result in a lower average than three big achievements alone. Be selective about the positive information you present. Focus on your greatest strengths. Resist the temptation to cram your résumé full of mildly positive elements. Less is more.

Perhaps business can learn a bit from the restaurant industry. My middle son works in restaurant kitchens. When he applies for a new job, he has a brief interview, his references are checked, and then he works all or part of a shift (called a stage, from the French word *stagiaire*, or “trainee”). This trial by fire provides information to both employers and candidates. Employers get a look at candidates' skills, and candidates get a sense of whether the kitchen is one they would mesh with and enjoy. More than once, my son has done a stage at a restaurant only to decide that it isn't a place he wants to work, even though it's willing to give him the job.

Finally, be wary of any organization that gives you the Myers-Briggs Type Indicator (MBTI) as part of the interview process. A popular inventory, the MBTI classifies people along four dimensions that are rooted in the psychological theories of Karl Jung. Unfortunately, the MBTI has a number of problems. In particular, its test-retest reliability is low, meaning that if you take it several times, you may get very different results. Because it fails to predict behavior consistently, it rarely appears in scientific studies of behavior. And the MBTI makes you appear more extreme on the four dimensions than you really are, because a lot of personality research suggests that most people fall toward the middle of them. If an organization gives you this test as part of its hiring process, it doesn't have people on staff who truly understand how personality traits should be used in the workplace.

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And then there's the day you get a call saying that you're being offered a job. You'll still feel a strong reaction, but it's likely to be one of happiness, joy, and excitement—perhaps tempered with nervousness. You have some work to do before you're ready to actually sign on the dotted line. You have to negotiate the terms of your employment. You have more leverage at this point than you're likely to have for some time to come. The firm has said that it wants you to work there, and now it's in recruiting mode. Once you accept the job, you won't have the same power to negotiate until it's clear that you might move elsewhere or your performance has gotten so good that your employer wants to reward you.

Don't wait until the actual negotiation to contemplate the kinds of trade-offs you're willing to make. Once the negotiation starts, you will feel pressure to make a deal, and you might make concessions you'll regret later.

I cohost a weekly radio show and podcast called Two Guys on Your Head with Bob Duke. Bob is fond of saying that a good decision should think right and feel right. There's a lot of wisdom there. If the reasons you have for a choice and your emotional reactions are misaligned, try to figure out why before moving forward.

How? refers to the procedures that let you get things done at work. Why? involves having good causal knowledge about the way the world works within your domain of expertise. With causal knowledge you can solve new problems in new ways rather than just executing a procedure you've learned.

The ability to know what you know and what you don't know is called metacognition—that is, the process of thinking about your thinking. Your cognitive brain has a sophisticated ability to assess what you do and don't know.

You're pretty good at judging whether you've heard of a particular person or a simple fact. You have a reasonably accurate sense of whether you can perform various procedures. If someone asks you

whether you know how to play the piano, your answer is likely to be accurate. Although your metacognition is good, it isn't perfect. Most people are at least a little overconfident in some areas—particularly when it comes to assessing their proficiency at a task. This overconfidence has sometimes been called the Lake Wobegon effect, after the fictional town created by Garrison Keillor for the radio show *Prairie Home Companion*. In Lake Wobegon, “all the women are strong, all the men are good-looking, and all the children are above average.” Research on this topic by David Dunning and Justin Kruger has found that the least skilled people in many domains tend to be the most overconfident in their abilities. One big reason for this is that they don't really understand what expert performance looks like, so they overestimate their own abilities relative to other people's. As you gain expertise, you not only learn new things, but also learn a lot about what you don't yet know. One important social aspect of the Dunning-Kruger effect is that it often leads to tension between younger employees and the firms they work for. People who don't really understand what skills are required for success in a particular domain may overestimate their own abilities and minimize their perception of the gap between themselves and more-senior members of a firm. As a result, they won't understand why they aren't being promoted faster and will quickly get frustrated in the early stages of their career. The more you appreciate everything involved in expert performance, the more patient you can be with your own development.

A second limitation in your metacognitive abilities is demonstrated in research by Leonid Rosenblit and Frank Keil showing that people overestimate the quality of their causal knowledge. They believe they understand how the world works better than they actually do. The researchers call this miscalibration the illusion of explanatory depth. This illusion has many sources. First, people often use words—particularly in business contexts—whose meaning they don't really understand. When I was writing this book, I heard a lot of people talking about the importance of concepts such as deep learning and blockchain for the future of business. It wasn't clear that the people using these terms knew much about them. But as a term becomes more familiar, you may feel you understand it even though you don't

really. Causal knowledge has an interesting structure. Unlike stories, which are typically linear, it is nested like Russian dolls. For example, this book is about applying psychology in the workplace, so I use terms drawn from cognitive, social, and motivational psychology. Beneath the level of psychology is neuroscience, which examines brain mechanisms. As I discussed in chapter 1, I'm not really delving deeply into how the brain does what it does, but an understanding of psychology requires some knowledge of the brain. And of course, the nesting continues: unpacking how brain cells work requires a lot of neurochemistry to understand how they generate the electrical signals that carry information. When you decide whether you understand how something works, you do the mental equivalent of checking whether you have the largest of the Russian dolls—the beginning of a causal explanation. You don't necessarily unpack the explanation completely, though, so you may not realize that after a certain point, one of your dolls is empty. That keeps you from recognizing when you lack key causal knowledge.

You cannot work to fill gaps in your knowledge if you don't know they exist. Research by Michelene Chi and Kurt VanLehn demonstrates that the best way to find such gaps is to explain things to yourself. That is, whenever you encounter a description of how something works, you should explain it back to yourself to determine what you've actually learned. That is the mental equivalent of opening the Russian dolls in your mind to make sure that you have the complete set.

The most powerful source of knowledge is the people around you. Your colleagues—and particularly your supervisor—should be helping you develop your career. They know how things work at your company. They have developed expertise in solving many of the problems you'll face on a daily basis. They are also likely to have suggestions for how to learn relevant information about your job.

To engage your colleagues to help you learn, you need to overcome a few barriers erected by your social brain. The first is that if you're like most other people, you resist admitting ignorance to save face in social situations. It's potentially embarrassing to own up that you

don't know something. This effect is so powerful that it occurs even in anonymous surveys—people will select a middle option in a range to communicate that they don't know enough to have an opinion. Sometimes people don't want to admit ignorance because they suffer from imposter syndrome. That is, they believe that they are frauds who have risen to a position they don't deserve.

Expert generalists have several motivational personality traits. They are very open to experience (interested in new things). They are high in need for cognition (not one of the big five personality traits, but important for the workplace), which reflects how much someone likes to think deeply about things. People high in this quality often continue to research new topics they encounter. The combination of high openness to experience and high need for cognition ensures that expert generalists learn deeply about a number of topics. At the same time, they are often moderate to low in conscientiousness (which is a big five trait). Conscientiousness leads people to finish the tasks they start—and also to follow the rules. Individuals with low conscientiousness are willing to put aside some of their assigned work to pursue knowledge by reading articles, watching videos, and talking with other people. Unfortunately, people are often rewarded for conscientiousness early in their careers. That's why many of the innovators I encountered talked about succeeding “despite the system, not because of it.”

Julius Caesar said that experience is the best teacher. He was right that in the grand scheme of things we learn from, experience is powerful. But Benjamin Franklin was also on to something when he said, “Experience keeps a dear school, but fools will learn in no other.” The best teachers may be the people around you.

Many organizations recognize the importance of mentorship to employee success, so they have mentorship programs in place. Soon after being hired, you may be contacted by someone who, you are told, is your mentor. The two of you may go out once for coffee or lunch and talk—and you may never really talk to that person again. A mentorship program like that fails, because it is inorganic.

One important member of your team is a coach. A good coach may or may not be a superstar at work but really knows the workplace and has a lot of experience. This person should be able to help you identify your strengths and weaknesses. Coaches play two important roles for you. They listen to your description of a problem you're facing, ask you questions that might help you see it differently, and guide you toward a solution so that you'll be able to handle similar things in the future. And they suggest how you can improve your performance at work, whether by reading certain books, joining certain groups, or acquiring new skills.

Another good mentor is a superstar. You're bound to know a few people in the workplace (or in your broader social network) who are truly successful. They have what you want. Connect with these people. Take them out for a cup of coffee. Send them an occasional email. You want to get nuggets from them on how they reached their peak. These people may not have a ton of time to spend with you, but whatever time you get with them is likely to be valuable.

Your mentorship team also needs a good connector. To accomplish your goals, you'll often need the help of other people—particularly people who have the skills to get jobs completed. You should find out who controls the resources you'll need when starting a project. Occasionally, you can find the person you're looking for through LinkedIn or other social media, but you might be looking for a needle in a haystack. And cold-contacting someone on social media is not always successful. A connector is someone with a wide social network who is skilled at greasing the gears of the social engine. When you approach connectors with a problem you're trying to solve, they often know several people who would be valuable for you to talk to and are willing to introduce you to those people to get things started. A connector can help you with the Who? question mentioned earlier in this chapter.

The next person to look for is someone I call a librarian. This person is particularly valuable in a large organization where you're unfamiliar with all the resources available. If you work for a small firm, you know everyone by name and have a clear sense of their responsibilities. In

large organizations, though, it can be hard to know what office, group, or person you need to get things done. And you may not understand why particular policies have been put in place. A librarian can help you navigate these complexities and allow you to take full advantage of what your organization has to offer.

It's also valuable to have a good teammate as a mentor—someone who understands what you're going through at work, will let you vent when you need to, and can lend a sympathetic ear when you've had a tough day. You don't want to air every grievance with everyone at work, but having one or two trusted confidants is important. They need not work in your organization, but they should know enough about your work that you don't have to explain everything from the beginning.

I mentioned earlier in this chapter that the best cure for the illusion of explanatory depth is to explain something you've learned. Ideally, you'll get in the habit of explaining things to yourself. Mentoring provides you with an opportunity to explain things to others. Working with other people can broaden your own understanding of some key aspect of the work you do.

Your mentees are typically earlier in their journey. They may be new to the organization, or they may be taking on a new role. Either way, they're focused on the future and bring energy to their jobs. Through the mechanisms of goal contagion, that energy is infectious. By spending time with people who are excited about pursuing a new goal, you can reinvigorate yourself and often find renewed purpose in your own work.

The best people in the workplace also play with their heads and their hearts. They become real experts in their domain. But they're comfortable enough with their knowledge to be able to listen and to adapt what they know to the circumstances. It's a matter of learning when the textbook response is the right one and when to deviate. The best way to get there is to keep developing both your base of knowledge and your ability to pay attention to the situation. Chances

are, one of your superstar mentors plays with both head and heart. Watch that person and strive to follow his or her lead.

Jazz musicians relish their turn to take a solo. Early on, it's tempting to fill that moment with as many licks and flourishes as possible. But as the great trumpet player Miles Davis said, "It's not the notes you play, it's the notes you don't play."

There is a simple rule here: any work-related piece of information about yourself that other people don't know and that you believe would reflect badly on you if they knew is something you should try to tell people as quickly as possible.

A central problem with the epidemic of busyness is that you may do a lot of things without seeing them add up to something important. Peter Drucker made a wonderful distinction between achievements and contributions that is important to keep in mind. An achievement is something you can check off your to-do list during the day. Answering an email, attending a meeting, or finishing an analysis for a report is an achievement. A contribution is an important high-level goal that—when you look back over your work in the past—you're proud to have accomplished. Closing a significant business deal, writing a book, or launching a product is a contribution. Your daily work life is (probably) filled with achievements. They constitute the variety of tasks that fill your time. But it takes some vigilance to ensure that they add up to a meaningful contribution.

Perhaps the most important thing you can do for your productivity is get regular sleep. People differ a lot in how much sleep they need, and the amount you need will probably change over the course of your life. You can do a pretty simple test to learn whether you're getting enough sleep. Read something complex during an afternoon when you haven't had any caffeine in the previous few hours. If you have trouble focusing and find yourself dozing off, you're not getting enough sleep.

The younger you are, the more you may be affected immediately by sleep disruption. In your twenties, a bad night's sleep can make it

hard to concentrate the next day and difficult to learn new material. As you get older, the negative effects of sleep deprivation are more long-term than short-term. Poor sleep in middle age won't necessarily make the next day bad, but consistently getting poor sleep in middle age is associated with cognitive problems in old age.

Aerobic exercise, too, improves productivity. A variety of studies in children, young adults, and older adults suggest that regular exercise (at least thirty minutes a day) improves aspects of the cognitive brain such as attention and memory and also overall brain health. Exercise is particularly important for ensuring that your brain remains healthy in your later years, keeping you productive throughout your life.

How much time is a reasonable amount to complete a task? To answer that question, I'll invoke the Yerkes-Dodson curve—a concept that Robert Yerkes and John Dodson introduced in 1908.

Psychologists studying the motivational brain have long known that you won't make progress toward your goals unless those goals are active—or, in the parlance of psychology, aroused. When a goal has a low level of arousal, you don't do much to achieve it. As the arousal level goes up, so does your performance—up to a point. Yerkes and Dodson proposed that increases in arousal eventually lead to a decrease in performance. Think of this overarousal as panic—you have so much energy that you aren't functioning effectively. So there's an optimal level of arousal for outstanding performance. People differ in their resting level of arousal. Look around at those you know. Some people are constantly motivated to get things done. They like to finish tasks well ahead of schedule. Others have a lower resting level. They need to be kick-started before they accomplish something on a project, and a close deadline is what really motivates them. Casey told me that she learned in college that she's more productive when she has a lot to do rather than just a few projects. That's a sign of low arousal. People like Casey need a certain amount of chaos to feel that they're firing on all cylinders. That much work would drive a high-arousal person over the edge of the Yerkes-Dodson curve.

Time away from work enhances your cognitive brain and makes you a better problem solver. For one thing, your memory tends to get stuck on particular solutions. The information you retrieve from memory inhibits alternatives that might also help you solve a problem. When you walk away from a problem, your memory resets, allowing you to go back and get different information. I've mentioned some benefits of regular sleep. Another one is that you tend to lose some of the details of things you're working on, so your description of a problem becomes more abstract. "Sleeping on" a difficult problem allows this more abstract description to pull information from your memory that differs from what you retrieved the previous day. For all these reasons, it's a good idea to get away from your work frequently.