

The Science of Leadership

WEAPONS OF INFLUENCE-PATTERN SEEKING

by

Joseph H. Boyett, Ph.D.

Boyett & Associates

EXECUTIVE SUMMARY

Pattern seeking is a key skill of leadership. It's fundamental to the development of a vision and followers look to leaders to gain control over events by finding the meaningful "downwind=good hunt" patterns. We think of leaders as people who can positively improve performance. Therefore, if the organization's performance improves for whatever reason there will be a natural tendency on the part of followers to attribute the performance gains to their leadership. However, the leader's contribution to the success of the organization may be nothing more than an illusion, the fortuitous result of happenstance.

There is nothing wrong with finding amazing coincidences in the lives of famous people or basking in the glory of sudden good fortune but leaders and followers should be careful. The gambler on a winning streak and the gambler on a losing streak are known to make the same mistake. The first credits his success to skill and makes riskier bets assuming that his newfound talents will ensure his continued victory. The latter attributes his losses to a string of bad luck and makes riskier bets assuming that his bad luck will soon change. Both usually find out that the increased risk they are taking carries a heavy price.

You can be sure that whenever a well-publicized tragedy occurs it won't be long before some industrious individuals discover one or more unexplained "coincidences." For example, not long after President John F. Kennedy was assassinated some enterprising individuals began circulating the following "astonishing coincidences" between the lives of Abraham Lincoln and John Kennedy.

- Lincoln was elected in 1860. Kennedy was elected in 1960.
- There are seven letters in each man's last name.
- Both Presidents were slain on Friday.
- Both were slain in the presence of their wives.
- Kennedy's secretary whose name was Lincoln warned him not to go to Dallas. Lincoln's secretary whose name was Kennedy warned him not to go to the theater.
- The successors to Lincoln and Kennedy were both named Johnson—Andrew Johnson succeeded Lincoln and Lyndon Johnson succeeded Kennedy. Notice that there are thirteen letters in both men's names.

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

- Kennedy's assassin Oswald shot Kennedy from a warehouse and hid in a theater. Lincoln's assassin Booth shot Lincoln in a theater and hid in a warehouse.
- Booth and Oswald were both murdered before they could stand trial.
- The assassins' names each have fifteen letters—Lee Harvey Oswald and John Wilkes Booth.¹

After the terrorist attack on the World Trade Center on September 11, 2001, a number of people discovered amazing coincidences involving the date 9/11.

- September 11th is the 254th day of the year: $2 + 5 + 4 = 11$
- The number of tower windows = 21,800 or $2 + 1 + 8 + 0 + 0 = 11$
- The State of New York was the 11th State added to the Union.
- The first plane to hit the towers was American Airlines Flight 11.
- The number for American Airlines is 1-800-245-0999

or

$$1 + 8 + 0 + 0 + 2 + 4 + 5 + 0 + 9 + 9 + 9 = 47 \text{ or } 4 + 7 = 11$$

- Flight 11 had 92 people on board = $9 + 2 = 11$
- Flight 11 had 11 crewmembers.
- New York City = 11 letters
- The Pentagon = 11 letters.
- George W. Bush = 11 letters.²

Not to be outdone, some enterprising person discovered a doomsday prophecy of the attack on the World Trade Center and the Pentagon in none other than a plain old \$20 bill. Of course you have to fold the bill the right way to see the prophecy. Here's how to do that:³

1. Fold a \$20 bill in half so that you see the top half of the reverse side.



Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

2. Fold the left half away from you as shown.



3. Fold the right half so that the burning Pentagon is revealed.



Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

4. Flip the bill over to see the World Trade Center.



And another especially astute origami master claimed to have discovered the name of an “evil one” in the folds of his \$20 bill. I have not been able to determine how he accomplished this feat. Maybe you can. The fold looks like this:⁴



Why We Seek Patterns

Why do people come up with such strange ideas? Obviously, there is no real significance to the “astonishing coincidences” and no prophecies to be found in the folded \$20 bills. These may be interesting curiosities or parlor tricks but do they signify anything more? Perhaps. If nothing else, they are good examples of an all-to-human tendency called “pattern seeking.”

As Michael Shemer, author of *How We Believe* notes humans learned the value of pattern seeking early on. After all, if you were the first to discover that standing downwind from the game was good for the hunt and that cow manure was good for crop growth you got a clear survival advantage over your competitors. Pattern seeking or, better yet, pattern finding is a good, even necessary skill for survival. It’s also good for our mental health.

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

Pattern seeking represents our effort to exert control over our environment and control, or at least the perception of control, is important for our psychological well-being. When people feel that they can impact their environment particularly to bring an end to stressful or disagreeable life events then they feel psychologically secure. When they sense a loss of control they become fearful and angry. If they can't regain at least some semblance of control over their life they eventually become demoralized, apathetic, and withdrawn. Loss of control can lead to psychological depression, physical illness, incapacity and ultimately death. The sense of control is critical and successful pattern seeking is required for discovering the mechanisms of control.⁵

The Problem With Pattern Seeking

Of course, the key to successful pattern seeking is to find the true patterns and reject the false ones. Discovering that “downwind=good hunt” is a useful pattern to discover. Developing the belief that “painting pictures of the game on the cave wall = good hunt” isn't nearly as useful. It might not do any harm but its effectiveness is doubtful.

The problem with pattern seeking is that our brains aren't that good at distinguishing truthful patterns from false ones. For all of the truthful “scientific” connections we make between things and events, we load up on a lot of superstitions and bizarre behavior.⁶ Thus, we learn of the famous baseball player who insists on running his wind sprints at exactly 7:17 PM, ends his grounder drill by stepping on the bases in backward order, and never steps on the foul line when taking the field but always when leaving it. We learn that a famous writer eats the same thing for lunch every day whenever he is working on a new novel and that the famous football coach always purchases coffee from two different coffee shops on his way to the stadium before each game. We do not walk under ladders, we avoid black cats, and we never, never invite thirteen people to a dinner party.

We seek patterns and, not too surprisingly, we find them even when they don't really exist. One reason is that we are so intent on looking for patterns that we ignore non-confirming evidence. The famous detective Sherlock Holmes made this point all too clear to his friend Dr. Watson on one of their camping trips—or so goes the joke.

Holmes and Watson had settled down for the night when Holmes nudged his colleague awake. “Watson, look up. What do you see?” said Holmes. “Why Sherlock,” replied Watson, “I see millions and millions of stars.” “Yes,” inquired Holmes, “but what does that MEAN, Watson?” “Well,” his friend answered, “I suppose it means the sky is clear, it won't rain, and tomorrow will be a good day.” “Yes,” Holmes said, “but what else does it mean?” “Well,” Watson answered, “I suppose with all of those stars, there is the possibility of other life, even other intelligence. Perhaps some creature is lying on some planet looking at us.” “Does it mean anything else?” asked Holmes. “Well,” Watson replied, “the majesty of the stars brings to mind the awe of life. In some way the heavens are evidence that God exists.” “Anything else,” asked Holmes. Exasperated at his friend's continued questioning, Watson responded, “Holmes I really don't have any idea what you are getting at. What does this all mean to you?” “Well, Watson,” said Holmes, “it tells me that somebody has stolen our tent.”

The Illusion of Control

The desire for control and drive toward pattern seeking is so powerful in most of us that we will behave as if we can control what are clearly chance events. Gambling is a case in point. It is clearly, as they say, a game of chance, unless, of course, you own the gambling casino. Here are some of the typical odds to be found in a typical gambling establishment.

For the roulette wheel, for example, with eighteen red slots, eighteen black slots, and two green slots (zero and double zero), the [house] take is only 5.26 percent. That is, by betting either black or red, you will win eighteen out of thirty-eight times, or 47.37 percent, whereas the house will win twenty out of thirty-eight times, or 52.63 percent. If you placed one hundred \$1.00 bets, you would be out \$5.26, on average...For straight

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

bets in Craps, the house take is a mere 1.4 percent; for Blackjack, with the most liberal rules and optimal (non-card-counting) player strategies, the house earns just under 1 percent. These are the best games to play if you are a gambler (that is to say, you will lose more slowly). With other games it is downhill for the gambler. The take for some slot machines, for example, is a staggering 25 percent. That is, you are losing 25 cents on the dollar, or, the house wins 62.5 percent and you win 37.5 percent of the time.⁷

Regardless of the game, the odds are against the gambler and in favor of the house. Most people know this. And yet, most people continue to gamble. Why? Most people who gamble believe that they can beat the odds. They believe they can control chance.

Every gambler has a sure-fire method, a way to beat the system, a way to exercise control over that which is uncontrollable. For example, we have the craps player in Las Vegas as described in the *Gambler's Digest*. Before every roll, he would take a deep breath and blow on the dice. The man standing next to the gambler asked why. The gambler explained his method as follows:

"Las Vegas has a very dry climate, right?"

"Right," his neighbor nodded.

"So the dice are usually very dry. I have a very damp breath, and I always exhale against a six and an ace. That not only gives the six and ace a little extra weight but makes them adhere to the table when they roll across it. The opposite sides come up and the opposite sides of a six and ace are an ace and six"

"Does it really work?" his neighboring player asked.

"Well, not all the time," the shooter admitted. "The load of condensation isn't quite heavy enough. But I've been on a hot liquid diet all day, and tonight ought to be the time I break the bank."⁸

It is true that Las Vegas has a dry climate, even though that says nothing about the humidity in the casino. And, moisture on one side of the dice might make it roll differently, although it is unlikely that the effect would be just as the gambler predicted. None of that matters because the gambler had a method, his method gave him the illusion of control, and the illusion of control was sufficient to instill in him the belief that he could beat the odds by exercising control over that which in reality was uncontrollable.

That gambler isn't alone. Research has shown that most of us want to control our environment. We want to find the truthful (downwind=good hunt) patterns but we will settle for the illusion of control.

We are particularly vulnerable to the illusion of control under certain situations that I will outline in minute. First, I have a question for you.

Let's assume you buy lottery tickets for one group of friends. For another group you don't buy the tickets yourself but you give them the money and let them buy their own tickets. The next day you discover that a different lottery offers your friends a better chance of winning so you buy tickets for your friends in the more favorable lottery. Then, you offer your friends an exchange. If they give you back the tickets they got for the less-favorable lottery, you will give them an equal number of tickets for the more favorable lottery. Which group do you think will be more likely to take you up on your offer and exchange tickets? Would it be the group that chose their own lottery tickets the first time around or the group that got tickets you had chosen for them?

If you said the group that got tickets chosen for them, you are right. Ellen Langer, who has probably written more about the illusion of control than anyone, actually conducted such a study. People who picked their own tickets refused to exchange tickets even when they knew that their odds of winning in the second lottery were much higher.⁹ It was apparent that people who picked their own tickets felt they somehow had more control over the outcome of the lottery and therefore a better chance of winning. In reality, they had

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

no more control over the lottery than people in the other group but picking their own ticket gave them the illusion of control.

Why are we so susceptible to the illusion of control? Well first of all, most of us want to feel like we are in control of our environment. As I said before, we want to be successful pattern seekers. We want the psychological safety of feeling that our lives are not subject to the whims of random events.

Second, sometimes it's not that easy to distinguish between controllable situations and non-controllable situations. Some admittedly non-controllable "chance" situations appear to involve elements of skill and therefore appear to be controllable. For example, in the lottery ticket situation the group that got to pick its own lottery numbers was able to get personally involved in a game of chance. For them, the lottery seemed to involve an element of skill, in this case number picking. Some researchers have suggested that one of the reasons card games such as poker and bridge are so popular is that they involve a combination of both chance and skill. In both games, there is a substantial amount of chance. You have to play the cards you are dealt. But, there is also an element of skill. You have to know when to hold'em and know when to fold'em. The skill part gives us the illusion of control.

Finally, there is the problem of randomness. What really is random anyway? Let's take a series of coin tosses. Imagine for a moment that you and a friend have bet \$100 on the toss of a coin. Your friend produces the coin to be used but just to be sure that it isn't weighted or "fixed" in some way, you suggest some practice tosses just to check out the coin. Your friend flips the coin a number of times and your record the following results. **Note: "H" stands for heads and "T" stands for tails.**

Sequence #1: HHHHHH

Sequence #2: TTTTTT

Sequence #3: HHHTTT

Sequence #4: TTTHHH

Sequence #5: THTHTH

Sequence #6: HTTTHT

Do any of these look to you as if they are suspiciously "non-random?" Would you place the bet on a flip of your friend's coin or would you demand that the two of you use a different coin?

If you are like most people, you would probably be a little suspicious with these results, particularly for sequences one through five. In fact, all of these sequences appeared in a series of 100 random tosses produced by Bruce Martin, a professor emeritus at the University of Virginia, Charlottesville, Virginia. These are the results of Professor Martin's 100 tosses with 25 tosses listed per row.

THTTTTHHTTTHTTTTHTHHHHHHTT
 HTHTTTTHHHHTTTTHTTTTHTTTTHT
 THHHTTHTHHTTHTHTHTHHHHHHH
 HHHTTTHHHHTHHHTTHTTTHTHTT

Can you find the six sequences? I show you a few below. To see the rest, go to the exhibit at end of this article.

T H T T T H H T T T H T T T T H T H H H H H H T T
 H T H T T T H H H H H T T T T H T T T T T T T H
 T H H H T T H T H H T T H T H T H H H H H H H
 H H H T T H H H H H T H H H T T H H T T T H H T T

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

What's going on here? Are the good professor's random coin tosses something less than random? Not at all. Would I distrust the good professor? Not us. Indeed his random coin tosses are random and the patterns we find in the sequence of coin tosses are real. As the professor points out, there is nothing unusual about finding patterns in random data.¹⁰ As strange as it seems, if you toss a coin enough times you will get some kind of "run" of heads—H H H H H—or tails—T T T T T—or other seemingly non-random pattern—H T H T H T, although you can't predict in advance what that pattern might be. In fact, as Martin points out, while the odds of getting five straight heads in five tosses of a coin are small (3 percent), the odds of getting a string of five straight heads in 100 tosses are quite high (96 percent).¹¹ You just have to toss the coin long enough. The same is true with other random events. If you comb through enough facts about the Presidents, you will find "amazing coincidences" like those I listed for Lincoln and Kennedy previously. Of course you will have to ignore many not-so-coincidental facts such as:

Lincoln and Kennedy were born and died in different months, dates, and states, and neither date is 100 years apart. Their ages at death were different, as were the names of their wives.¹²

We can easily be tricked by this seemingly non-random quirk of randomness. The gambler hits a hot streak. The quarterback completes an unbelievable string of passes. The basketball player makes 50 percent of his free throws. Is it skill or is it just chance? Ask the gambler, the quarterback, the basketball player, or any of their ardent fans and guess what answer you will get. It's skill, of course.

The Attribution Error

Earlier I noted that humans are pattern seekers and what they are seeking is information that will allow them to exercise control over their environment. This desire to find patterns and to exercise control causes us to make errors. We underestimate the role of chance in events and over estimate the role of skill and effort. A large body of research suggests that people are much more likely to attribute success to their own efforts rather than to chance events. Conversely, they are much more likely to attribute failure to things outside of their control.¹³ The quarterback will attribute his string of pass completions to his skill while attributing his incomplete passes and interceptions to bad luck. Business leaders do the same. Just read their annual reports. That's what researchers Gerald Salancik and James Meindl did.

Salancik and Meindl looked at the explanations CEOs of eighteen U.S. companies gave for their firm's performance in annual reports to stockholders and compared them to alternative explanations of performance such as the economic environment. Not surprisingly, the researchers found that regardless of the actual cause of the performance results, the CEOs uniformly gave themselves credit for their firm's positive performance and attributed negative outcomes to things outside their control. What surprised Salancik and Meindl was how strong this tendency was. "[M]anagements," they found, "were three times more likely to acclaim their contributions to the firm's good fortune than they were to make any other casual statement. And they were three times more likely to fault the environment for setbacks than they were to take responsibility for them."¹⁴

Practical Lessons for Leaders and Followers

Leaders: Pattern seeking is a key skill of leadership. It's fundamental to the development of a vision and followers look to leaders to gain control over events by finding the meaningful "downwind=good hunt" patterns. We think of leaders as people who can positively improve performance. Therefore, if the organization's performance improves for whatever reason then there will be a natural tendency on the part of followers to attribute the performance gains to their leadership. Transformational leaders stand ready to take credit. If nothing else, the organization's success and the leader's claim of credit for that success enhances followers perception that their leader has great leadership skills and heightens the illusion that the leader is in control of the situation even if he is not.

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

Followers: Beware of the power of pattern seeking to shape your perceptions. The success of your organization may be directly attributable to the skills of your leader. They may also be the fortuitous result of happenstance. There is nothing wrong with finding amazing coincidences in the lives of famous people or basking in the glory of sudden good fortune but be careful. The gambler on a winning streak and the gambler on a losing streak are known to make the same mistake. The first credits his success to skill and makes riskier bets assuming that his newfound talents will ensure his continued victory. The latter attributes his losses to a string of bad luck and makes riskier bets assuming that his bad luck will soon change. Both usually find out that the increased risk they are taking carries a heavy price.

I said that pattern seeking is a key leadership skill for constructing a vision. It is. In the next article, I am going to begin discussing the leadership science of persuasion. How does a transformational leader craft a vision and then convince people to commit to achieving it? We'll learn some not-so-obvious things such as that vision-crafting is a much more mundane skill than we normally think it is and that selling a vision is as much about style as substance.

EXHIBIT

Professor Martin's Random Coin Tosses

The Answers

T	H	T	T	T	H	H	T	T	T	H	T	T	T	T	H	T	H	H	H	H	H	T	T
H	T	H	T	T	T	H	H	H	H	T	T	T	T	H	T	T	T	T	T	T	T	T	H
T	H	H	H	T	T	H	T	H	H	T	H	T	H	T	H	T	H	H	H	H	H	H	H
H	H	H	T	T	H	H	H	H	H	T	H	H	H	T	T	H	H	T	T	T	H	H	T

Copyright (c) 2006 by Joseph H. Boyett. All Rights Reserved.

For permission to copy, distribute or post to your web site send an e-mail by clicking on "CONTACT" on the authors's website: <http://www.jboyett.com>.

NOTES

¹ See http://www.greatdreams.com/trade_numbers.htm

² Ibid

³ For more information on this trick see: <http://www.urbanlegends.about.com/library/bl20dollarbill.htm/> 11/17/2003.

⁴ See <http://www.urbanlegends.about.com/library/bl-an052902.htm/> 1/17/2003 Also, L404

⁵ See Langer, E.J., *The Psychology of Control*, (Beverly Hills, CA: Sage, 1983) for more on the psychology of control.

⁶ See Shermer, Michael, *How We Believe: the Search for God in an Age of Science*, (New York: W.H. Freeman and Company, 2000), 45-47

⁷ Ibid, 50-51

⁸ Cited in Langer, E.J., *The Psychology of Control*, 30

⁹ Referenced in Thompson, Suzanne C., "Illusions of Control: How We Overestimate Our Personal Influence," *Current Directions in Psychological Science*, 1999/Dec, 187-190

¹⁰ Martin, Bruce, "Coincidences: Remarkable or Random?" at <http://www.http://www.csicop.org/si/9809/coincidence.html>

¹¹ Ibid

¹² Ibid

¹³ For more information on this tendency toward what researchers call the "fundamental attribution error" see Ross, L.D., "The Intuitive Psychologist and His Shortcomings: Distortions in the Attribution Process," in Berkowitz, Leonard (ed) *Advances in Experimental and Social Psychology*, 1977/10, 173-220, Kramer, R. and M. Neale (Eds.), *Power and influence in organizations*, (Beverly Hills, CA: Sage, 1998), Shermer, Michael, *How We Believe: the Search for God in an Age of Science*, (New York: W.H. Freeman and Company, 2000), Brown, J.D. and R. Rogers, "Self-serving Attributions: The Role of Physiological Arousal," *Personality and Social Psychology Bulletin*, 1991/17, 501-506, Salancik, G. & J. Meindl, "Corporate Attributions as Strategic Illusions of Management Control," *Administrative Science Quarterly*, 1984/29, 238-254, and Arkin, Robert M., William K. Gabrenya, and Bill McGarvey, "The Role of Social Perspective in Perceiving the Causes of Success and Failure," *Journal of Personality*, 1978/Dec/46/14, 762-777

¹⁴ Salancik, G. & J. Meindl, "Corporate Attributions as Strategic Illusions of Management Control," 251