

The Proposal Gene



By Jayme A. Sokolow, Ph.D.

Dean Hamer, a molecular biologist at the National Institutes of Health, claims that there are genetic links to sexual orientation and spirituality. Thanks to him, we may have identified the gay gene and the god gene. Can the discovery of the proposal gene be far behind?

Thanks, Gene!

Several months ago, I was completing a proposal to the National Institutes of Health for a Montgomery County, Maryland, biotechnology firm. One day as we were anguishing over the Business Volume, a biologist who had worked closely with our proposal team came into my office. Because I cannot reveal his name for reasons that will become apparent, I will call him Dr. Gene Quackenbush.

Gene said to me a little too nonchalantly, “Good morning, Jayme. How’s the Business Volume coming along? Doing anything for lunch today?” “No,” I eagerly responded. “Let’s get together.” In good conscience, I could not decline an opportunity to consume a meal that included neither oatmeal raisin cookies nor pretzels. On just the Technical Volume alone, I already had consumed my yearly carbohydrate requirements.

Over veggie burgers and tofu salad in a nearby restaurant, we talked about proposals and the proposal profession. For a scientist, Gene seemed to have an unnatural interest in these subjects. Toward the end of our lunch, he explained why.

“Jayme, for the past two years I’ve been studying the impact of genetics on the human personality. Have you ever heard of Dean Hamer?” “No,” I replied. “Tell me about him.”

Much of our behavior is heavily influenced by genetics.

As I plunged my fork into a slice of carrot cake with metronomic regularity, Quackenbush gave me a brief lecture about his favorite geneticist. “Hamer is Chief of the Section on Gene Structure and Regulation in the Laboratory of Biochemistry of the National Cancer Institute. His research has been on recombinant DNA, drugs and vaccines, and gene regulation. He is a co-inventor of animal cell gene transfer and is developing molecular therapeutics for HIV/AIDS.”

As my eyes began misting and my feet began falling asleep, Quackenbush laughed and paused. “Sorry, Jayme,” he apologized. “I’ll try to speak in layman’s terms.”

“Based on Hamer’s research on the role of inheritance in human behavior, he published a controversial book in 1994, *The Science of Desire*. In it, he argued that male homosexuality is passed through the maternal side from a set of 22 markers, which are short stretches of DNA that geneticists use to identify a particular spot on a chromosome. Hamer found that the same set of five markers in a particular region were positively correlated with male homosexuality.”

Humans inherit a predisposition to embrace a higher power. This belief provides us with an evolutionary advantage because it offers hope and a sense of purpose.

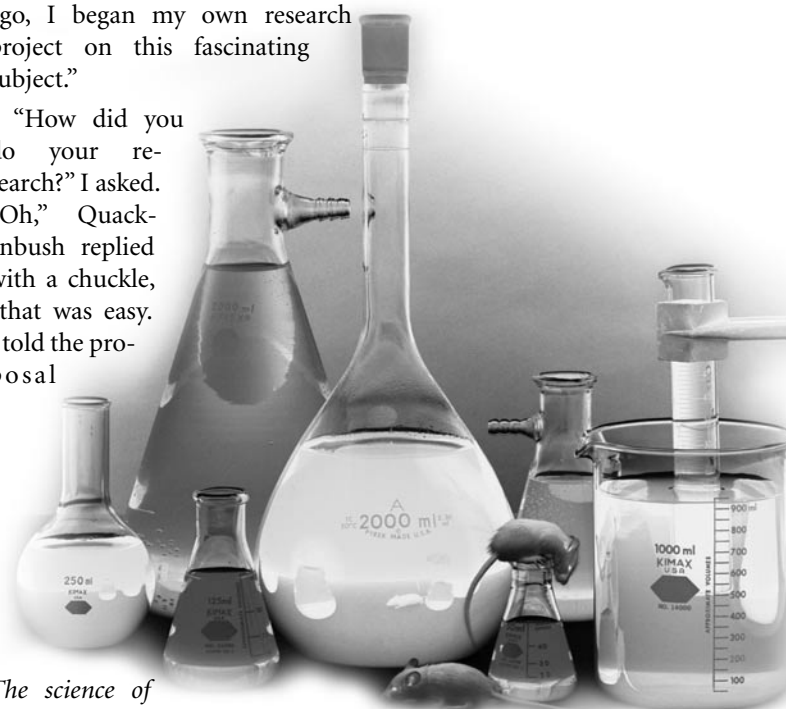
“In 1998, Hamer published another book, *Living with Our Genes*. In this book, he provided plenty of scientific and anecdotal evidence that much of our behavior is heavily influenced by genetics.”

“Recently, in *The God Gene: How Faith is Hardwired into Our Genes*, Hamer argued that humans inherit a predisposition to embrace a higher power. This belief, he said, provides us with an evolutionary advantage because it offers hope and a sense of purpose, which we need to survive. *Time Magazine* just ran a feature story on Hamer and his new book.”

“The book sounds really interesting,” I interrupted. “I’d like to read it.” “I think you would enjoy it,” Quackenbush replied.

After a pause, he said, “Hamer’s research is really why I’ve invited you to lunch. For the past five years, I’ve been studying the genetics of fruit flies. It is very interesting, real cutting-edge, but I found the work a little tedious. Fortunately for me, over the past two years I’ve been working on our company’s proposals to the National Institutes of Health. I began noticing that proposal professionals seemed to have similar personalities, and I wondered whether there was a connection between their genetic makeup and their proposal work. About a year ago, I began my own research project on this fascinating subject.”

“How did you do your research?” I asked. “Oh,” Quackenbush replied with a chuckle, “that was easy. I told the proposal



The science of genetics has grown in leaps and bounds in the past decade.

teams that I was doing research on genetics and personality, and wanted to incorporate them into my study. All of them signed consent forms, which enabled me to take DNA samples from the Styrofoam coffee cups they left all over their offices. I also did their personality profiles, which involved interviews and psychological testing.”

We had a obligation to share this groundbreaking research with the proposal profession.

“How come you never asked me to sign a form? I feel left out,” I said with a smile.

“Oh,” Quackenbush responded in a tone of mock seriousness. “You’re a problem case. You don’t drink stimulants.” Then Quackenbush whipped out a consent form from his briefcase and asked me to sign it. Afterwards, he took out a cotton swab, gently rubbed it on the inside of my mouth, and put the swab in a narrow glass flask. “Now I can add you to my research database,” Quackenbush said with a hearty laugh that I found almost insidious.

“What do you plan to do with the DNA?” I asked. “I’m following the same procedures that Hamer used,” Quackenbush replied. “I’ll see if I can isolate any specific genes that seem common to proposal professionals. This is a small sample, but it’s a start. In the next few years, my database should become larger and more statistically valid.”

By the time Gene had finished discussing his genetic research, I was very intrigued. Although this was only a preliminary study, I thought that the proposal profession should learn more about it. “Gene,” I said, “I work on the staff of *Proposal Management*. Would it be possible for us to publish the results of your research, with the caveats you’ve mentioned?” “Sure,” he replied. “I’d be glad to send you my preliminary results. But you and your colleagues may have trouble understanding the genetics argument. I’ll also send you a brief primer on genetics as an introduction.”

“Great,” I responded. The next morning, I received an electronic file from Dr. Quackenbush. He requested that his real name not be used and that his research be qualified with the words “preliminary” and “tentative.”

John Elder, the Managing Editor of *Proposal Management*, was as excited about Dr. Quackenbush’s research as I had been. After reading the report, he agreed that we had an obligation to share this groundbreaking research with the proposal profession. Consequently, *Proposal Management* is pleased to present the following report about the genetic foundation of proposal professional behavior. Names have been changed to protect the anonymity of the subjects.

A Primer on Genetics

Genetics is the study of how characteristics are passed on from generation to generation through the cells of organisms, which contain genes. Cells are the basic building blocks of life. In the human body, there are literally trillions of cells that provide the body’s structure, take in nutrients from food and convert them into energy, and carry out very specialized functions. Cells also contain the human body’s heredity material, or genes. According to the Human Genome Project, humans have between 30,000 and 40,000 genes.

Human DNA consists of about three billion bases, more than 99.9% of which are the same in everyone.

Each cell, however, only uses a tiny fraction of its genes. The other genes are repressed or turned off. The process of gene regulation makes a brain cell different from the cell of your pancreas. Gene regulation most commonly occurs

On a proposal even coffee cups aren’t safe from scrutiny!



when the information from a gene's DNA (deoxyribonucleic acid) is transferred to a similar molecule called RNA (ribonucleic acid) in the cell nucleus. Gene regulation plays a key role in producing protein molecules, the building blocks of life.

Enzymes make and change the more than 300 chemicals in the brain that help determine how we think, feel, and act.

DNA makes up our genes, and every cell in an individual's body has the same DNA. Information in DNA is stored in a code made up of just four chemical bases: adenine (A); guanine (G); cytosine (C); and thymine (T). Human DNA consists of about three billion bases, more than 99.9 percent of which are the same in everyone. The order of these bases determines the genetic information available for developing and maintaining ourselves. For example, the sequence TCGA means something very different from the sequence AGCT.

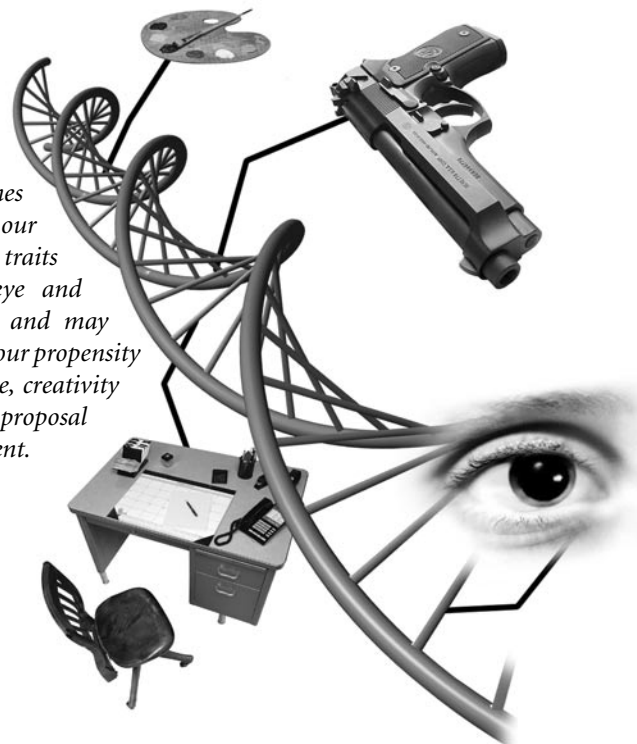
DNA pairs up with each other — A with T and C with G — to form units called base pairs. Each base is attached to a sugar and phosphate molecule, forming a nucleotide. Nucleotides appear in two strands that form a spiral, or double helix. The double helix is like a ladder with the base pairs serving as rungs and the sugar and phosphate molecules forming the sides of the ladder. Each strand of DNA can make copies of itself so that when cells divide, each new cell has the same DNA as the old one.

In the cell nuclei, DNA molecules are constructed of long, thread-like structures called chromosomes. Each cell normally contains 23 pairs of chromosomes. Of these pairs, 22 are the same in males and females. The twenty-third pair, the sex chromosomes, differs between males and females. Males have one X and one Y chromosome and females have two copies of the X chromosome.

Genetic makeup is the single most important factor that explains differences among people.

Information in DNA is converted into proteins, which are composed of amino acids. These proteins have many functions, but the most important one is to act as enzymes that change one chemical to another. For example, enzymes make and change the more than 300 chemicals in the brain that help determine how we think, feel, and act. One enzyme converts the amino acid tyrosine into dopamine, a powerful chemical that makes you feel energized and excited. Another enzyme dissolves dopamine, which makes you feel relaxed or even lazy.

Our genes specify all our inherited traits such as eye and hair color and may also affect our propensity for violence, creativity and even proposal management.

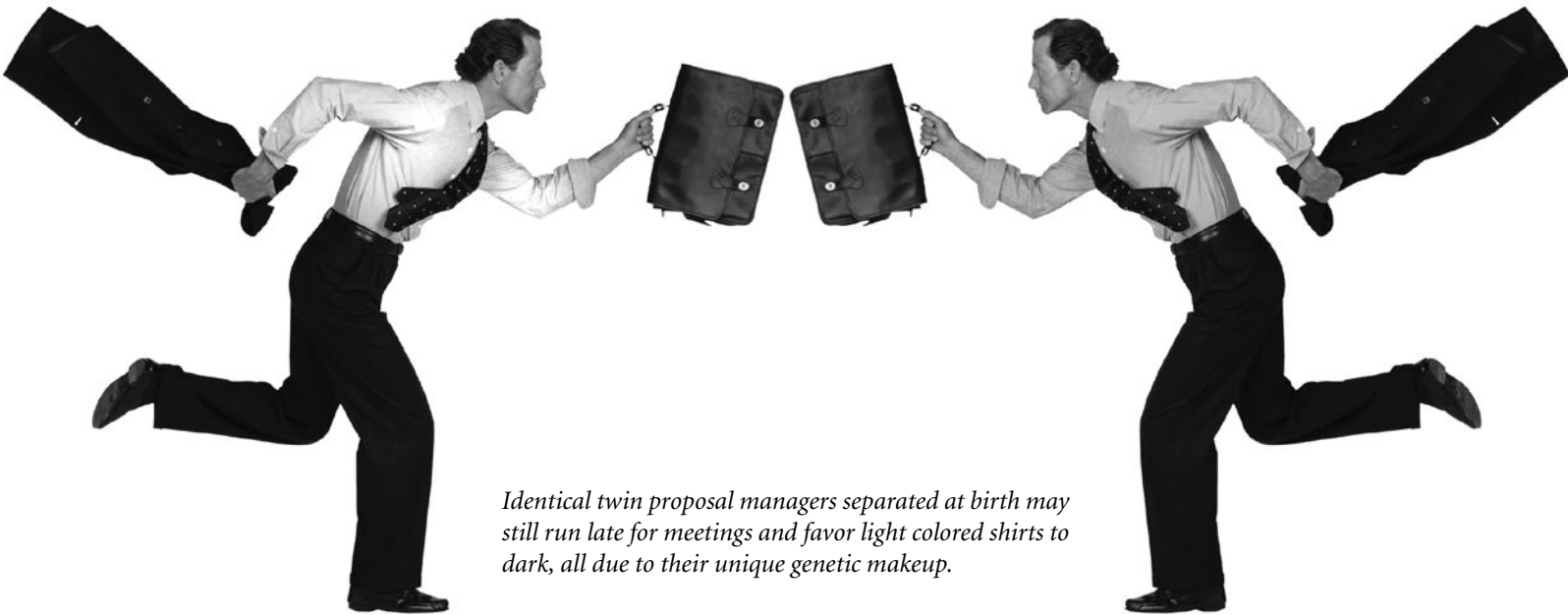


Our genetic inheritance not only may predispose us to behave certain ways, but genes also may encourage us to seek certain environments.

Although we share 99.9 percent of our genes with other humans, the 0.1 percent difference has profound implications. This means there are approximately 3 million differences among the three billion chemical bases in our body, which account for all inherited variations among people from height to eye color to significant aspects of our personality. For example, one difference between you and the person sitting in the first row on the bus may be that you have a C in a particular gene on a chromosome while he has a G in the same location. That difference, however — the equivalent of a single letter in a single book stored in a library of 30,000 books — may help explain why you are outgoing and he is extremely shy.

Genetics and Personality

Over the past decade, molecular biologists and neuroscientists have demonstrated that many of our basic personality traits are genetically inherited. In fact, researchers like Dean Hamer would argue that genetic makeup is the single most important factor that explains differences among people. Just as we inherit many of our physical characteristics from our parents and other blood relatives, we also inherit more subtle aspects of our personalities — our propensity to be happy, to worry, or to be intelligent.



Identical twin proposal managers separated at birth may still run late for meetings and favor light colored shirts to dark, all due to their unique genetic makeup.

Our genetic inheritance not only may predispose us to behave in certain ways, but genes also may encourage us to seek certain environments that will markedly shape our behavior. People are different partly because their DNA creates different brains and personalities. The evidence for the importance of inherited factors comes from studies done on identical twins.

Identical twins develop from one fertilized egg and have the exact same DNA. Fraternal twins, in contrast, develop from separate eggs and, thus, they are as genetically similar as ordinary siblings. By comparing the resemblances among identical twins, we can help gauge the power of heredity. The problem in doing these studies, however, is obvious. Most identical twins are raised in the same homes, with same parents, and in the same neighborhoods. It is impossible to separate environmental from genetic factors. The obvious solution is to study identical twins who were separated at birth or shortly thereafter to see how they resemble and differ from each other.

Identical twins reared apart were very much alike as identical twins raised together.

The most famous study done in the 1980s was the Minnesota Study of Twins Reared Apart. After examining hundreds of Minnesota identical twins who were separated at or after birth, researchers concluded that identical twins reared apart were very much alike as identical twins raised together. To a remarkable extent, these twins were similar sizes, talked similarly, had similar likes and dislikes, and had remarkably similar personalities and life experiences.

Genetic inheritance is the single most important factor that distinguishes us from other people – Can this biological breakthrough be applied to proposal professionals?

We all are the product of nature and nurture. In fact, as Dean Hamer has pointed out, “it’s part of our nature to respond to nurture.” While people are affected by different environments, people differ primarily because they are the product of different genetic inheritances. Studies of identical twins seem to indicate that our genetic inheritance is the single most important factor that distinguishes us from other people. Can this biological breakthrough be applied to proposal professionals?

The Proposal Gene

If people differ because of their genetic makeup, we should be able to trace the genetic roots of personality by linking specific personality traits to specific genes. Among a small sample of proposal professionals responding to biotechnology Requests for Proposals in the Washington, DC metropolitan area (N=34) over a two-year period, all of them exhibited varying degrees of the following personality traits:

1. Obsessive-compulsive behavior
2. A desire to work in thrill-seeking environments
3. An unnatural, insatiable hunger for sweet and starchy carbohydrates
4. Anger management issues.

Pete had developed a fearsome reputation for his ability to organize complex records and remember an astonishing variety of seeming insignificant facts related to his contracts, both past and present.

The remainder of this report will probe the putative links between these personality traits and the subjects' genetic makeup.

Obsessive-compulsive Behavior

Pete Jones had been painfully obsessive-compulsive for as long as he could remember. As a child, he collected old newspapers, balls of string, and major league baseball cards of obscure outfielders with low lifetime batting averages. In high school, he was attracted to school subjects and term paper topics that required the enumeration of staggeringly long lists of facts. After Pete graduated with academic honors, he joined the Marines and gradually became his military base's chief Contracting Officer. He also won his base's "Trivial Pursuit" competition four years in a row. By the time he retired from the Marines,

he had developed a fearsome reputation for his ability to organize complex records and remember an astonishing variety of seeming insignificant facts related to his contracts, both past and present.

At age 41, Pete is now a Proposal Coordinator. He describes himself this way: "Although this is not a pleasant thing to say, I act very compulsively most of the time. It's difficult for me to relax. When I have nothing to do, I feel very anxious. I'm most comfortable working on large proposals that involve many, many details. The more volumes and details, the better. I love making long lists of things to do and crossing them off. This gives me a great feeling of accomplishment."

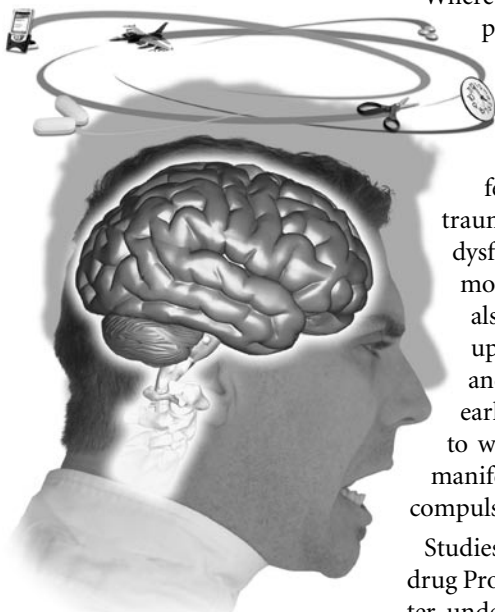
Although obsessive-compulsive behavior is not considered a highly desirable personality trait in many work environments, large number of proposal professionals openly and proudly manifest this kind of behavior.

"I love the capture management life cycle because there are so many steps, sub-steps, and activities in the process. On proposal teams, I am often given the responsibility for tracking all e-mails, ensuring compliance with the RFP, and proofreading the proposal. I love these tasks. I find these tasks deeply gratifying, and they help provide my life with whatever meaning it possesses."

For better or worse, Pete is not unique among proposal professionals. Although obsessive-compulsive behavior is not considered a highly desirable personality trait in many work environments, large number of proposal professionals openly and proudly manifest this kind of behavior.



Obsessive-compulsive proposal professionals are most comfortable addressing statements of work that require many details that must be indexed, matrixed, cross-referenced and re-checked.



The brain of the typical proposal professional is a complex environment filled with competing ideas and resources.

Where does obsessive-compulsive behavior come from? A bad life or a certain kind of personality? Although some proposal professionals described traumatic childhoods or dysfunctional families, most proposal professionals characterized their upbringings as happy and normal. But from an early age, they all seemed to worry excessively, which manifested itself as obsessive-compulsive behavior.

Studies of the impact of the drug Prozac may help us to better understand obsessive-compulsive behavior. Serotonin is a simple molecule and the most widespread neurotransmitter in the brain. We know that serotonin plays an important

role in harm avoidance, or worrying, but we do not yet know whether the difference between worrying and being happy is due to low serotonin, high serotonin, or changes in the brain's level of serotonin. We do know, however, that Prozac has been successfully used to target the gene that produces the serotonin transporter.

According to recent molecular research, this gene produces different levels of serotonin in different people. About one-third of the population has two copies of the more powerful gene that produces high levels of serotonin while the other two-thirds has one or two copies of the shorter form of the gene that produces less serotonin. There seems to be a strong correlation between the shorter form of the gene and a propensity to worrying and obsessive-compulsive behavior. Of course, there may be other genes that also contribute to this kind of temperament.

Most of the proposal professionals in my study (N=29) had the shorter form of the gene that produces serotonin. They included Proposal Managers, Proposal Coordinators, Book Volume Managers and Capture Managers. Proposal professionals with the more powerful gene (N=5) occupied more modest and less financially remunerative positions on proposal teams. In interviews, they frequently stated that they did not consider proposal development an attractive career option.

Based on this preliminary research, I would conclude the following:

- The proposal profession attracts into its ranks an unusually high number of highly obsessive-compulsive people as measured by low serotonin levels in their brains.
- The more obsessive-compulsive are proposal professionals, the more likely they are to occupy positions of authority on proposal teams.
- Less obsessive-compulsive proposal professionals are likely to experience frustration in advancing their careers.
- Proposal professionals should take Prozac only after a deadline.



Working in Thrill-seeking Environments

Mary Flood walked into a proposal development center like she belonged there forever. She filled the room with her charismatic presence and sent out a powerful message to everyone around her: I am in charge here.

Although proposal professionals might avoid physical thrill-seeking, such as mountain climbing or parachuting, they constantly seek out novel stimuli.

Mary had worked as a Proposal Manager for many large firms for over 20 years. Her friends were like her — middle-aged and rising in the corporate hierarchy. They worked long, hard hours and enjoyed taking risks. The thrill of working on proposals attracted Mary to the proposal profession. She liked receiving a high salary, but Mary enjoyed even more the excitement of managing large proposals with tight deadlines. Unlike her younger brother, who was an elementary school teacher in St. Louis, Mary enjoyed living in the fast lane.

Mary, like many proposal professionals in this research study (N=31), sought out novelty and enjoyed taking risks. Although they were not necessarily fond of high

risk situations, they admitted that they were willing to take risks for the reward of varied and intense experiences, such as working on a proposal. Although they might avoid physical thrill-seeking, such as mountain climbing or parachuting, they constantly sought out novel stimuli. Mary and her friends were excited by new, unconventional, and innovative tasks. They enjoyed putting themselves in risky situations, which are legion in the development of proposals.

Over the last decade, scientists have identified the chemicals in the brain responsible for making us feel that certain environments and activities are pleasurable and rewarding. One of these major chemicals is dopamine, which causes people to feel good. As Hamer has argued, “if seeking new sensations feels good to some people, and the release of dopamine is one way the brain feels good, it makes sense that dopamine might be related to novelty seeking.” Recently, researchers in Israel studying schizophrenia examined dopamine disruptions to the brain. They identified one gene that makes the D4 dopamine receptor called D4DR, which varies greatly from one person to another. Receptors are proteins that form on the side of brain cells. The receptor is recognized by dopamine, which activates a series of chemical reactions.

90% of the proposal professionals in my study had the longer form of the D4DR gene, which appears closely related to a desire to seek out novel situations.



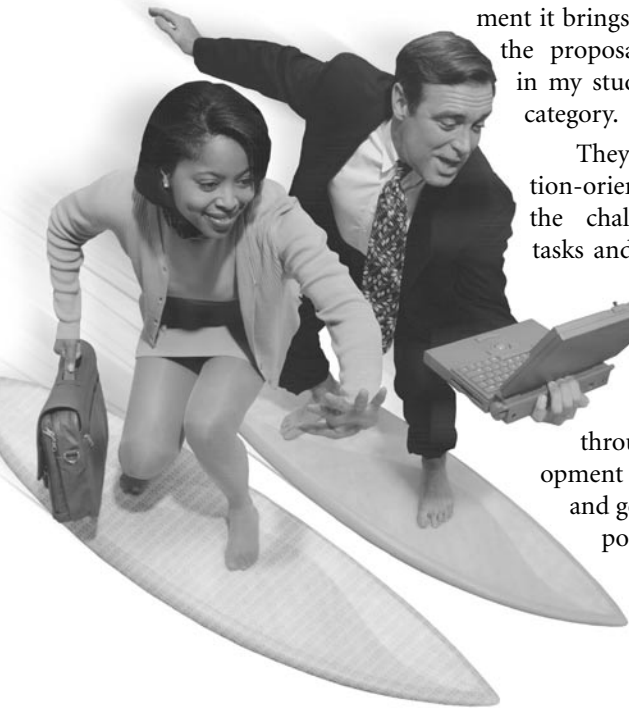
Thrill-seeking proposal professionals enjoy tight deadlines and the adrenaline rush of correcting Red Team documents.

When Israeli scientists did a follow-up study with ordinary people, they discovered that there was a high correlation between the length of an individual's D4DR gene and high scores on psychological tests for novelty-seeking. This research was later confirmed by Hamer's National Institutes of Health laboratory. The Minnesota study of identical twins showed similar results.

Proposal professionals tend to be action-oriented and enjoy high-risk ventures, such as trying to win new business through the development of commercial and government proposals.

Interestingly, 90 percent of the proposal professionals in my study had the longer form of the D4DR gene, which appears closely related to a desire to seek out novel situations. Informal observations confirmed the genetic link. Although everybody likes some degree of novelty, thrill seekers tend to be curious, enthusiastic, and willing to take on risks because of the enjoyment it brings them. Most of the proposal professionals in my study fall into this category.

They tend to be action-oriented and enjoy the challenge of new tasks and high-risk ventures, such as trying to win new business through the development of commercial and government proposals.



The lifestyle of the average proposal professional may not include surfing the waves of Maui but will most certainly involve surfing the Internet.

Based on this preliminary research, I would conclude the following:

- The proposal profession attracts into its ranks a disproportionately high number of people who enjoy thrill-seeking as measured by the longer form of the D4DR gene.
- Thrill-seeking in proposal professionals manifests itself primarily in bureaucratic environments. There is no evidence that proposal professionals are irresistibly attracted to physical thrill-seeking, such as surfing. Many of them, in fact, spend inordinate amounts of time toiling in physically incapacitating cubicles and other distasteful work spaces.
- Proposal professionals who are not fond of risk are likely to experience frustration in advancing their careers.
- In most local chapter meetings of the Association of Proposal Management Professionals, risk-taking activities rarely go beyond random drawings for gifts. Perhaps chapters should consider more exciting diversions to attract and retain thrill-seeking members. Can "Proposal Fear Factor" be on the horizon?

An Unnatural, Insatiable Hunger for Sweet and Starchy Carbohydrates

Sally Gomez was a plump baby, and as she grew older excessive weight became a constant problem. Sally always enjoyed large meals and rich deserts, even after marriage and two children. Seven years ago, Sally was promoted to a Proposal Coordinator at her company, which meant long hours and lots of pressure.

Now George lives a very sedentary life, eats three hefty meals a day along with cookies, donuts, and a few candy bars, and has to buy bigger wardrobes every few years to accommodate his growing girth.

Now Sally feels badly about herself. Since her marriage, she has gained 30 pounds. Although Sally's loving husband encouraged her to lose weight and even purchased a free membership for her in a local health club, Sally was

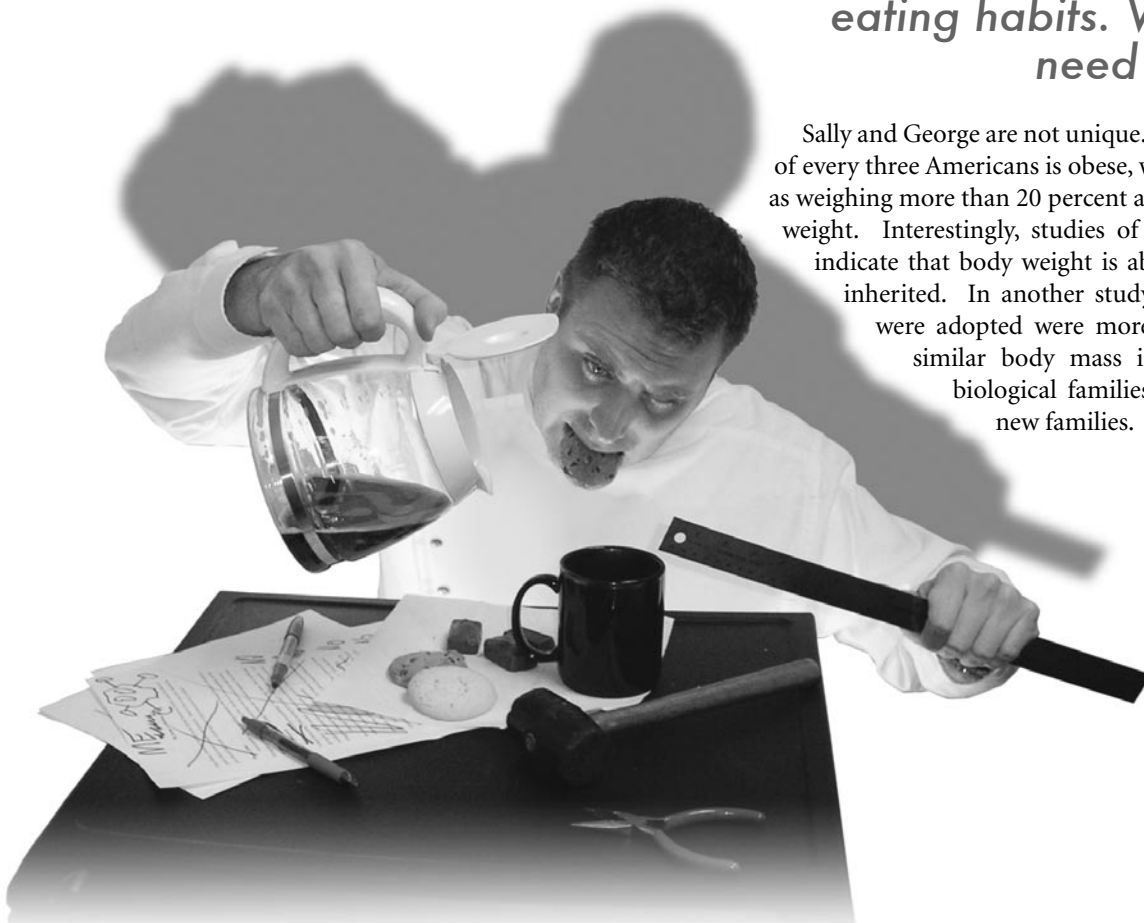
too embarrassed to attend workouts. At the age of 42, she often feels exhausted and spends most of the day sitting in front of a computer, munching on snacks.

Sally works with George Thompson, a Proposal Manager. George has been a conscientious person all his life. When he became Proposal Manager, he starting waking up at 6 A.M. to make the one-hour drive to his company where he would routinely work 12-hour days. Often in the evenings, he would continue working after his children went to sleep.

When George became a Proposal Manager, he weighed about 10 pounds more than he did in college. He used to jog three mornings a week, but George stopped after his promotion because there was no longer enough time to exercise. Then he tried going for walks during lunch, but work became too overwhelming. Now George lives a very sedentary life, eats three hefty meals a day along with cookies, donuts, and a few candy bars, and has to buy bigger wardrobes every few years to accommodate his growing girth.

In recent studies, scientists have found a link between serotonin – which may produce obsessive-compulsive behavior – and eating habits. Worriers may need to eat more.

Sally and George are not unique. Today, one out of every three Americans is obese, which is defined as weighing more than 20 percent above ideal body weight. Interestingly, studies of identical twins indicate that body weight is about 70 percent inherited. In another study, children who were adopted were more likely to have similar body mass indices as their biological families, but not their new families.



Low levels of leptin and serotonin may adversely affect proposal professionals' eating habits and contribute to the consumption of donuts during the proposal life cycle.

Scientists have isolated a gene in the fat cells of mice that may be responsible for obesity. Leptin is an amino acid protein that helps control body weight. Located in the hypothalamus, the brain's eating center, high leptin levels decrease food intake and increase metabolism while low levels do the opposite. Leptin levels are now being studied in humans, but their relationship to eating habits and body weight is unclear.

In recent studies, scientists have found a link between serotonin — which may produce obsessive-compulsive behavior — and eating habits. Worriers may need to eat foods that supply their bodies with serotonin. Sweet and starchy carbohydrates boost the brain's supply of tryptophan, an amino acid that serves as the building block for serotonin. In contrast, foods that are high in proteins also contain tryptophan, but it is the least abundant amino acid and thus it never reaches the brain. Serotonin seems to be the chemical mediator between certain personality traits and eating habits.

The diet of a proposal professional often consists of cookies, donuts and jelly beans frequently consumed by the light of a computer monitor.

Proposal professionals with low leptin and serotonin levels consumed 37% more sweet and starchy carbohydrates than their colleagues.

In my study, about one-third of the proposal professionals (N=11) had low leptin levels, which leads to increased food intake and decreased metabolism. This may be typical of the general population. In dramatic contrast, most proposal professionals (N=29) had the shorter form of the gene that produces serotonin. These individuals tended to be the biggest worriers and the most obsessive-compulsive individuals on proposal teams. They consumed 37 percent more sweet and starchy carbohydrates than their colleagues, probably to boost the supply of tryptophan in their brains. On average, they were heavier than their colleagues after height and gender were factored into my analysis.

This is a troubling observation with serious implications for the proposal profession.

Based on this preliminary research, I would conclude the following:

- Proposal professionals who occupy the most responsible positions of authority are likely to consistently consume greater amounts of sweet and starchy carbohydrates than their colleagues.
- The proposal profession may attract disproportionately large numbers of people who need to consume sweet and starchy carbohydrates. The capture management life cycle may provide these individuals with an acceptable environment in which to engage their craving for tasty but unhealthy foods.
- Proposal professionals who consistently eat high-protein foods may be less likely to be obsessive-compulsive individuals and hence they may experience frustration in advancing their careers.
- During the capture management life cycle, proposal professionals should never snack on celery sticks, kale, or soy peanuts.
- Proposal professionals should be discouraged from purchasing, borrowing, or reading *Dr. Atkins' New Diet Revolution* (2002).

Anger Management Issues

The day is Friday and the time is 4:30 PM. Just as you are feeding the latest version of the Technical Volume into the shredder, the Proposal Manager telephones you. "Where are the three appendices?" he asks. You are irritated by the question because you told him yesterday that you could not complete the appendices until the Technical Volume had been reviewed by the Green Team. You are about to yell at the Proposal Manager, but you stop yourself. "The appendices will be completed by Monday morning," you meekly respond. Inside, however, you are seething because your entire weekend is ruined.

Males have a tendency to anger and aggression because they produce testosterone, which increases dramatically at puberty and gradually declines during adulthood.



Constructive anger management may not be a viable option for many proposal professionals, especially those under extreme stress.

As you leave the office, your body stiffens and your face becomes warm. Your brain has produced chemicals that tighten your muscles, pump blood to the surface of your skin, and produced hormones that make you even more irritable. When you arrive home, your wife asks if you remembered to pick up the chicken for dinner. You quickly lose your temper and start yelling at her.

There seem to be two genetic links to anger. The most important one involves the X and Y chromosomes. In the United States, males commit five times as many aggravated assaults as women, ten times as many murders, and 86 times as many rapes. And, throughout the world, the rate of male-to-female homicide remains constant, even though murder rates vary widely from country to country. As measured by crime statistics everywhere, males are more aggressive than females. In the general population, about one in every 1,000 males have two Y chromosomes, but in the American prison population the figure is five times higher, and among the criminally insane the figure is even greater.

Social structure may influence the amount of serotonin and hence, the anger that people produce – perhaps a more egalitarian social structure would result in more people with high serotonin levels (and lower tendencies towards violence).

Males have a tendency to anger and aggression because they produce testosterone, which increases dramatically at puberty and gradually declines during adulthood. There seems to be a direct connection between high levels of testosterone, anger and aggression. In a study of almost 5,000 US military veterans, the ones with the highest testosterone levels were more likely than their peers to be involved in assaults, physical aggression, or getting in trouble with their superiors. Other studies have demonstrated a high correlation between testosterone levels and aggression in sports.



As noted in the Spring/Summer 2003 edition of Proposal Management, proposal professionals and their hominoid brethren the apes may be more similar than previously believed.

The relationship between being male, levels of testosterone, anger, and aggression is true of just about every species. It is not unique to humans.

The proposal profession attracts into its ranks a disproportionately high number of people with low serotonin levels in their brains which makes them prone to frequent bouts of anger and aggression.

The second genetic link to anger may involve serotonin. In studies of mice, rats and monkeys, increasing serotonin levels made them less aggressive while decreasing serotonin levels led to more aggressive behavior. In one study of monkeys, the level of serotonin accounted for 25 percent of their aggressive behavior.

Interestingly, serotonin levels may also be influenced by the social environment. In studies of monkeys and humans, leaders had higher serotonin levels than those toward the bottom of the social hierarchy. When they changed positions in the hierarchy, so did their serotonin levels. Perhaps our social structure influences the amount of serotonin and, hence, the anger that people produce. Low serotonin levels cause anger, aggression and violence, and this may be partially triggered by one's perception of his or her place in the social hierarchy. Perhaps a more egalitarian social structure would result in more people with high serotonin levels.

These generalizations were borne out by my study of 34 proposal professionals. This is a troubling observation with serious implications for the proposal profession.

Based on this preliminary research, I would conclude the following:

- Male proposal professionals are far more likely than their female colleagues to display anger, aggression, and to commit inexplicable acts of murder and mayhem.
- The fastest and most effective way to lessen anger and aggression within proposal teams would be to immediately fire all the males.
- The second fastest and most effective way to lessen anger and aggression within proposal teams would be to pay everyone the same salary and flatten the hierarchy.
- The proposal profession attracts into its ranks a disproportionately high number of people with low serotonin levels in their brains, which makes them prone to frequent bouts of anger and aggression.
- Proposal professionals who do not frequently display anger and aggression are likely to experience frustration in advancing their careers.

Conclusion: Genetics is Not Destiny

Our genetic makeup predisposes us to think and behave in certain ways. Genetics even may encourage us to seek out certain kinds of environments. But genetics is not destiny.

Proposal professionals, like everyone else, are not robots programmed by their DNA.

Even identical twins raised apart, despite their remarkable similarities, do not display the exact same character traits or experience life exactly the same way. There are no direct correlations between specific behaviors in specific situations and the level of serotonin in your body or the form of your D4DR gene. Life is uncertain, and even when the Human Genome Project finishes mapping our genes, the combination of DNA and environmental influences will always keep our lives a beguiling mystery.

Proposal professionals, like everyone else, are not robots programmed by their DNA. The presence of chemicals such as serotonin in the bodies of proposal professionals will never provide us with convincing explanations for the successes and failures of our proposals. But speculation about the impact of our genetic inheritance on behavior can be a rich source of humor, which is always needed in every profession.

The author would like to thank Jen Mar for providing him with the idea for this article.

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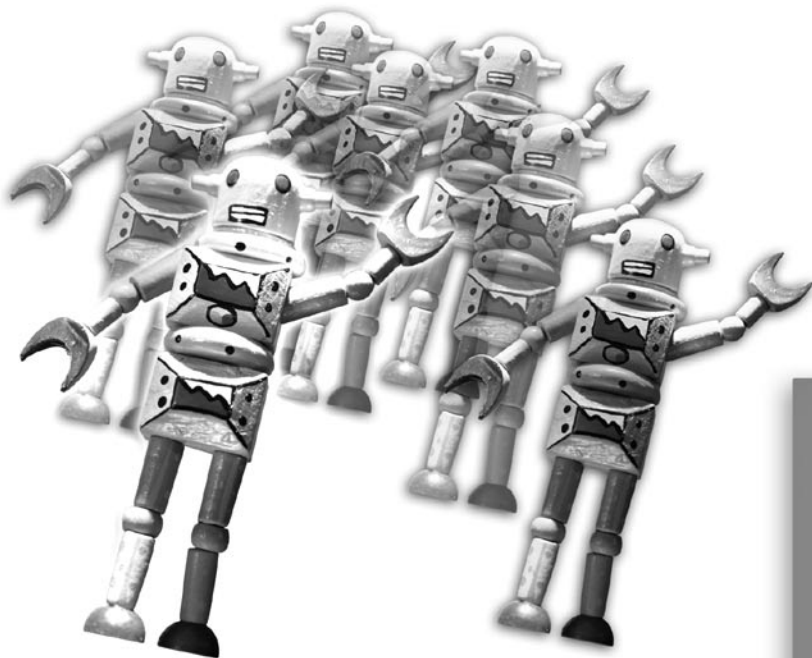
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You are not a robot! Make the most of your genetics and your environment but choose your own destiny.

Jayme A. Sokolow, Ph.D., is founder and president of The Development Source, Inc., a proposal services company located in Silver Spring, MD, that works with businesses, government agencies, and nonprofit organizations. He is also Assistant Managing Editor and Chair of the Editorial Advisory Board of Proposal Management. He can be reached at JSoko12481@aol.com.