



ALTHOUGH THEY WERE IDENTICAL TWINS, FRANK WAS LEFT BRAINED,
WHILE EDDY WAS PREDOMINANTLY RIGHT.

The New Sciences and the Learning Organization Part 2A: Don't Be a Slave to Your Genes

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“The emerging science of molecular biology has made startling discoveries that show beyond a doubt that genes are the single most important factor that distinguishes one person from another. We come in large part ready-made from the factory. We accept that we *look* like our parents and other blood relatives; we have a harder time with the idea that we also *act* like them. ... This does not mean we are doomed to become our parents; it means we begin our journeys where our parents left off.”

— Dean Hamer & Peter Copeland,
Living with Our Genes: Why They Matter More Than You Think
(1998)

Over the last decade, scientists from a variety of disciplines have been studying the human genome: the genetic code that dictates much of what makes us human. For example, discoveries in one area of research, called the *Genome Project*, give us a deeper understanding of heredity, including which genes determine whether or not we're predisposed to cancer and other illnesses, and which genes determine our intelligence. Another area of research that studies identical twins separated at birth gives us information on how much our genes determine our behaviours. These discoveries, among countless others, are provocative because they shake up our thinking about how we view ourselves.

We now know that much of our behaviour is genetically based (e.g., intelligence, thrill seeking, worry, anger, hunger, aging). This means that genes matter, and that environment plays a different role than we believed in the past. The debate between nature and nurture is now archaic and irrelevant. What is important is to understand how your genes are expressed within the environment in which you live. Your genes dictate what you have in your suitcase of possibilities. The environment in which you live determines what you take out of the suitcase and what you'll use. For example, Al Capone was a Mafia boss, but, given a nurturing environment, he might have become a criminal

lawyer. In fact, it was his intense interest in and understanding of the law, even when he was in prison, that made it difficult for the prosecutors to nail him for any of his crimes except tax evasion.

Dean Hamer, a molecular geneticist, is involved in the *Genome Project*. With Peter Copeland, Hamer has written a groundbreaking book called **Living with Our Genes**, focusing on the science of personality, behaviour, and genetic diversity. What they have to say has enormous implications for how we think and behave in all aspects of our lives, from our families to our organizations. Understanding these implications can help us to recognize how our genes work, and whether or not we wish to allow them free rein in our lives.

As the opening quote states, you are probably quite comfortable with the fact that your genes dictate how you look. You may not be as comfortable with the fact that your genes also dictate much of who you are: in other words, your personality. Your personality is a combination of two factors: *temperament* and *character*. Your genes give rise to your *temperament*; your environment and how you learn from that environment give rise to your *character*. Temperament doesn't change much as you mature. Your temperament shows up very early in your life and can be described and measured using three aspects: *activity level*, *reactivity*, and *mood*. To understand these aspects, try the following exercise. Recall what you were like as a child when you were confronted with change:

- **Activity Level:** How much energy did you apply to new or changing situations? Did you get excited, or did you sit back and observe the change?
- **Reactivity:** Did you react to change as an opportunity or a threat?
- **Mood:** How would you define your mood during these times of change? Were you excited, calm, or worried? Or, did you experience mood swings: one minute becoming excited, and the next minute becoming worried?

Most of us still carry our temperaments with us into adulthood. To test this, try the following exercise. Think about what you're like as an adult when you are confronted with change:

- **Activity Level:** How much energy do you apply to new or changing situations? Do you get excited, or do you sit back and observe the change?
- **Reactivity:** Do you react to change as an opportunity or a threat?
- **Mood:** How do you define your mood during these times of change? Are you excited, calm, or worried? Do you experience mood swings: one minute becoming excited, and the next minute becoming worried?

According to Hamer and Copeland, "Temperament is not easy to change; it tends to endure as a person matures. If you were a shy baby, you probably are a shy adult. ... Although there are important nongenetic factors, such as parenting style and schooling, no single influence is more profound than genetic makeup." To test this, compare your responses

to the three aspects of temperament above, as a child and as an adult. If your responses are the same, you can see how your temperament is operating. If your responses are different, then you've learned an approach that is different from your temperament. To understand this, examine what caused you to learn a different response, and when that learning actually happened. For example, if you were a child who sat back and watched change happen, because it frightened you, you're likely to become an adult who acts the same way. However, if your job requires you to lead a change effort, you learn to develop a new approach to change — one that is different from your temperament. What you've done is to develop your *character*.

Character is easier to change than temperament. You acquire character from your experiences in the world; primarily from your experiences with others, including your parents and teachers. It's your character that determines how your genes are expressed. Hamer and Copeland state that "At the heart of character is the concept of *self*. Do we see ourselves as responsible for our own actions or at the mercy of outside forces?" Are we the victims or the designers of our destinies? It's through character that we have the advantage of creating selves that are authentic and effective in this world. "Character, the acquired part of personality, can improve even at an advanced age. ... as people move from young adulthood to the last decades of life, they become more willing to help others and to improve themselves."

We can learn to deliberately change our behaviours. We don't have to be victims of our pasts, whether it's our genes or the environments in which we were raised. We have choices; we don't have to be slaves to our genes.

This is what character means: to make choices about how we act. For example, humans aren't genetically designed to take negative criticism about their behaviours. If you're like most people, when someone tells you that what you're doing isn't correct or appropriate, you tend to react to the criticism, rather than to try to understand it. Most people tend to react to criticism by *taking it personally*. This means that, when criticized, you're likely to believe that the criticism is directed at your concept of *self*, rather than at a single behaviour. This is the temperament side of the equation. This is your *nature*. However, you can learn to take criticism well, and use it to learn to be more effective. When you do this, you're making choices and developing strategies to deal effectively with any form of criticism. This learning is what develops your character; your ability to do something that is *against your nature*.

"Even though underlying temperament is not likely to change, people do learn from experience. ... What starts as self-discipline or will power, such as an angry person who practices counting to ten, can become a new ingrained behavior. ... Each time we exercise will power, we rewire the brain to overcome inborn temperaments." — Dean Hamer & Peter Copeland, **Living with Our Genes: Why They Matter More Than You Think** (1998)

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