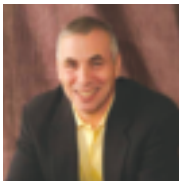
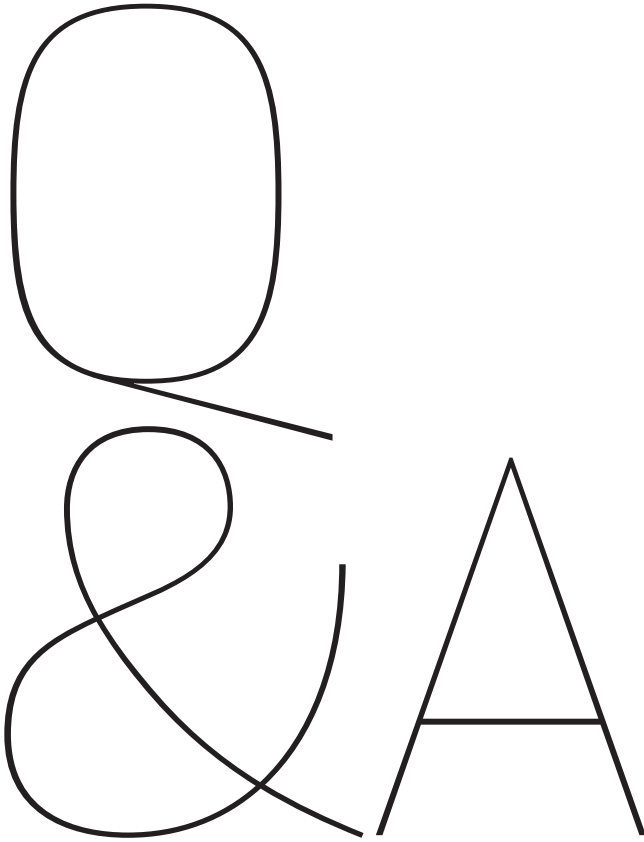




## Questions for: **Michael Gelb**



Some advice from the man who has taught Nike, IBM and Microsoft's leaders  
**how to think like**

**Leonardo Da Vinci.**

**Interview by Stephen Watt**

**You have closely studied the thinking processes of great thinkers such as Leonardo da Vinci. What can we learn from his example?**

Not surprisingly, da Vinci is a supreme role model for creative thinking. Considered perhaps the greatest genius who ever lived, he was not only a pioneer in Biology, Botany, Geology and Anatomy, but is renowned as one of the greatest fine artists ever, in part because he integrated scientific and artistic ways of thinking. There are other great scientists who have had some artistic ability, and there are great artists who've dabbled in Science, but no one has integrated the two as thoroughly as da Vinci.

For me, he was a childhood hero, and the more I learned about him, the more he seemed to embody the very essence of human potential. My close study of his notebooks, his words and his actions has allowed me to uncover seven principles for thinking like him. The first principle is to have never-ending *curiosity*, and to always ask compelling questions. This sets the stage for the second principle, which is to *become an original thinker*. Doing so requires the third principle, *sharpening of the senses*. If you are adopting that principle and are keenly attuned to your surroundings, the result is often confusion and uncertainty, especially in today's chaotic environment. For that reason, you need the fourth principle, which is to *thrive in the face of ambiguity*.

The way out of ambiguity to clarity takes us to the fifth principle: to *think using the whole brain*, integrating art and science, logic and imagination, intuition and reason. Using the whole brain requires energy, bringing us to the sixth principle: to *balance body and mind*, and the seventh, to connect everything to everything else by *being a systems thinker*. In business, this means formulating your vision, your mission and your values and transforming them into a compelling strategy; choosing the appropriate tactics; hiring people who share your vision and values; training and developing them to manifest the strategy, and providing the right incentives and compensation so that they maintain that alignment. The job of a leader is to

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look for connections and disconnects between the organization's vision and values, and what is happening at the workplace every day; to find the most salient points of leverage and to make adjustments on a continuing basis.

#### Which of the seven principles is the most important in today's environment?

All seven are essential, because they form a system. For me, the principle that is most lacking in the business world is the fifth one: using the whole mind. At many business schools, students learn a range of brilliant left-hemisphere strategies, but they pretty much have their intuition beaten out of them. It's been said of **Thomas Edison** that if he got his MBA, he would probably have tried to invent a bigger candle. A study of business people conducted three decades ago showed that their number-one regret was all the times they failed to listen to their intuition. In fact, this is many people's biggest regret, not just business people. That doesn't mean we should pull out the Ouija board and start doing séances. Intuition is something we can learn to cultivate by accessing the 'incubatory mode' of thinking and integrating that with the analytical processes that are more commonly taught at business schools.

#### As people get older, they tend to become narrower and to focus on a limited range of interests and activities. Why do we fail to keep learning new things?

Fear, habit and ignorance. Many people are simply not aware that we are designed to go on learning throughout our lives. We grow up with this mythical notion that education ends when we finish school, and we form habits and become self-limiting. The first step to developing our potential is to understand that we are designed to go on learning throughout our lives. There is a definite art to *learning how to learn*. My new book [coming out in March of 2011] focuses on how to improve the mind as we get older. It is a little-known fact that adults actually learn language faster and more effectively than children. Most adults don't believe this is true, which creates a negative, self-fulfilling prophecy. But studies show that if you combine adult cognitive development, our understanding of grammar, syntax and vocabulary, with the openness of a child – if you are playful and unworried about making mistakes – you will learn dramatically faster and better. Recognizing that you

can learn anything you want to is the most powerful knowledge out there.

#### What is 'meta thinking', and how can we use it to become more effective problem solvers?

Meta thinking is *thinking about thinking*. It entails an understanding that thinking has many variations and is a skill that we can develop. Unfortunately, most of us have not been trained in the art of thinking. I say *art* because there are many different kinds: there is thinking that involves laying out data and being as objective as possible; there is thinking that involves looking for new ideas, which we call 'divergent' or 'generative thinking'; there is thinking that involves critiquing ideas and looking for the weaknesses in a proposal; and there is self-reflection, similar to emotional intelligence, which allows us to examine our own feelings and prejudices about a given idea. The best thinkers can move quickly and appropriately through the different modes as required by a situation. When you train a team to do this, suddenly everyone appears smarter!

Meta thinking is part of what a university is supposed to teach. If you cannot give a compelling version of your opponent's argument, you really have not thought through your own position. Da Vinci counseled that we look at everything through a minimum of three perspectives. Look at your own perspective, an alternative perspective, and then find a third alternative perspective, and view them all with an open mind. Only then can you say that you have actually thought about something. You don't have to be a transformational genius to practice meta thinking: you can bring just a touch of genius to what you do every day by following these techniques.

#### Is it possible to extricate our emotions from our thoughts?

The answer is no, and when you think you have done so is often when you get into trouble. However, we can become aware of how our emotions are affecting our thinking, and as we do so, we can become more free to consider other options and make a wiser decision. In my consulting practice I work with pharmacologists and engineers – brilliant people who often suffer from the illusion that, because of their training and discipline, they are objective. People who work in technically-demanding industries tend to be the most unconscious of the ways emotion drives their conclusions.

### What are some of the common characteristics of creative thinking?

There is a universal process of creativity that is like the flow of the tide: it goes in and out. The mind starts in a state of expansiveness, intuition and incubation, but in order to experience true creativity, we must move into the analytical, logical and practical modality. One of the myths of creativity is that it is a function of the brain's right hemisphere; in fact it is a function of both left and right, integrated and in harmony.

The 'aha' moment of pure creativity only comes after intensive and focused work – and even when it does come, it is usually unexpected. **Albert Einstein** had his key insight into the Theory of Relativity when he was closing his eyes and imagining the experience of riding on a sunbeam out into the universe. **Sir Isaac Newton** had his revelation about optics when he saw some light reflecting on crystals, creating a rainbow. The discovery of the structure of the benzene ring came as the German chemist **Friedrich August Kekulé** was napping in front of his fireplace (and there is some debate whether he was aided by a couple of good brandies.) Whether the innovation is in science or business, 'aha' moments tend to come in moments of relaxation – more likely in a park or on the sofa than in the laboratory.

What people forget is, that moment never would have happened if there wasn't first intensive, disciplined, focused work going on for a considerable period. Furthermore, the creativity never would have been realized if, after the 'aha' moment, the genius didn't have the training, discipline and skill to translate that leap of the imagination into the language of science, technology or business. It is the harmony between the receptive, intuitive mode and the active, driving, practical mode that yields creativity: the harmony and the creativity are universal; but the way people manifest it is highly individualized.

### How can we apply your insights to our personal and professional lives?

We are all familiar with the wisdom of 'sleeping on' a problem. The leaders I work with report that they are far more productive when they *walk away* from a complex challenge after first studying it intently. In the sessions I lead, I always schedule a period of overnight reflection, but prior to that, I usually have participants do something out of the ordinary, like write poet-

ry over a glass of wine. Typically they come back the next day and are surprised to find that they are much more effective and productive than they would have been otherwise. Instead of having their 'aha' moment on the plane ride back from the conference when it is too late, they have an opportunity to share their insight with the people who can benefit from it the most. It takes foresight to build such 'downtime' into the process, especially in business, since the general view is that 'breaks are for sissies', and you have to be serious and miserable to get any real work done. These ideas are nonsense of course, but they are still prevalent.

### You portray some of the greatest geniuses of history as real human beings with real weaknesses. What is the lesson for the rest of us?

Most of us are all-too-aware of our own weaknesses, but fortunately, you don't need to be perfect in order to be highly creative. A good first step is to surround yourself with role models. We see modeling at all stages of life. Consider how a baby duck imitates its mother, and then watch a family in a shopping mall: the posture of the parents is reflected in that of the children. What distinguishes humans from other animals is that as we get older, we can *choose* who we want to consciously imitate. If you are interested in creativity and high performance, or in the full expression of your potential, it makes sense to choose the most inspiring and brilliant of role models. At the same time, it is comforting to realize that they all made mistakes and had weaknesses, and you don't have to be perfect to follow their example and access your own creativity. **R**

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**Michael Gelb** is a writer and trainer who specializes in the fields of creative thinking, accelerated learning and innovative leadership. He has 30 years of experience as a consultant to organizations such as Nike, Merck, IBM and Microsoft. His best-selling books include *Discover Your Genius: How to Think Like History's Ten Most Revolutionary Minds* (HarperCollins, 2002) and *How to Think Like Leonardo Da Vinci* (Delacorte, 1998).