

By ALLAN KOAY

W E all know that the brain is divided into the left hemisphere and the right hemisphere, but the question is, does the left know what the right is doing, and vice versa?

In the 1960s, in a desperate attempt to cure epilepsy, neurosurgeons resorted to cutting the corpus callosum, the link between the left and right hemisphere, thereby "splitting" the brain.

Psychobiologist Roger Sperry, who won a Nobel Prize in 1981 for his research into the human brain, carried out extensive experiments on an epileptic patient who had had such a surgery. He found that the left side of the brain specialised in certain functions such as language processes, while the right was dominant in other areas such as visual construction.

For years the popular conception was that the left brain was analytical, logical and objective, while the right is intuitive, imaginative and subjective. Most neuroscientists feel that this is a simplistic way of looking at the difference between the two hemispheres.

Some years ago, clinical neurologists Geroon Fink of the University of Dusseldorf, Germany, and John Marshall of the Radcliffe Infirmary, Oxford, carried out a brain scanner test and found that the right brain concentrated on the broader picture, while the left looked at the details.

Brain-scanning tests also shattered the popular myth that functions of logic were strictly left-brain, while imagery was strictly right-brain. For example, in language processes, the left was found to deal with grammar, while the right handled such things as intonation.

According to clinical psychologist Dr Teoh Hsien-Jin, it is true that each side of the brain has its dominant functions, but both sides have everything.

"Logically speaking, if one side of the brain is damaged, then a person should lose all functions connected to that side," says Dr Teoh. "But surgeries have been done and also accidents have occurred in which people had to have one side of their brain removed. And they could still walk and talk and think. This tells us that all the functions of the human body exist on both sides of the brain. And when one side is damaged, or certain areas are damaged, the other side compensates and increases its functions."

Dr Teoh cites a noted case in which a construction worker had his head impaled by a metal pole. Later, the man could still walk and talk and basically function normally.

"If you look at the brain in terms of percentages, and you take as an example the ability to vocalise, both sides have 70% of the function," Dr Teoh explains. "But one side, because of the distribution of electricity, may function more at 80%. It does not mean that you cannot find that function on the other side."

"Losing one side of the brain doesn't mean losing certain functions of the body. They still exist, but to a lesser degree, that's all."

As for split-brain patients, he

says the problem is with coordination more than anything else. But would it make sense then to say that a person can be made more "left-brain" or "right-brain," or certain functions of the brain can be enhanced for certain purposes, as claimed by some advertisements in newspapers and magazines?

"I don't think so, because it makes more sense to talk about enhancing the whole brain's functions rather than the left or right side," says Dr Teoh. "We also know that with regard to verbal abilities and abstract abilities, simply learning a lot and knowing a lot is not the key to being creative. The bigger problem we find in education today is that students don't know how to apply what they learn. The real key to being 'brainy' is actually application."

That would naturally mean that brain-based education is not a viable prospect, and creativity cannot be taught by concentrating on the right side of the brain. Dr Teoh believes that people have taken a theory and looked at it in a very simplistic way.

"But life's more complicated than that," he explains. "How can you concentrate solely on brain-based education when you do not take into account individual differences? Not everyone is the same. It's also about family background, about how one is disciplined, about language, about whether one has access to resources. And if you go a step further, it's also about personality."

"The field of personality research is much stronger than the field of brain-based research. We have more evidence of personality differences rather than brain differences. Much of the work on brain differences has not been done on normal people. It has been done on people with brain injuries. The research cannot be carried out on normal people because of human rights."

Dr Teoh takes the view that creativity depends more on society's perception than anything else. It is whether society thinks what we have produced is of use, which determines whether we are creative.

"So genius and creativity are what society thinks you are, not what you think you are," he says. "You can't make a person creative or a genius."

Award-winning artist Lee Kian Seng agrees. Lee takes the holistic approach when dealing with the creation of art. He believes art is not just about dreaming and imagining, but it also requires the analytical and logical to be truly creative.

"When you create something, you don't just base it on an image," says Lee. "Creativity is holistic. It is like architecture, in which you combine imagery with logic to create a building. Creating an artwork is almost the same concept, but at a higher level."

Lee explains that each individ-

It's all in the mind



ual looks at a picture and reads the image based on his or her own mental experiences.

"That is why everyone looks at a picture differently because of individual experiences," he says. "Art is not so mystical, but it can be appreciated in many ways. If not, it is no longer art."

"When you look at a picture that is distorted, your brain automatically tries to correct the image. That is why some people look at some artwork and say: 'That's wrong!' It's because they come from a very conventional background. Creative art is always about exploring."

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Clinical psychologist Dr Teoh Hsien-Jin: 'Genius and creativity are what society thinks you are, not what you think you are.'