

# THE RIGHT BRAIN

A NEW UNDERSTANDING  
OF THE UNCONSCIOUS  
MIND AND ITS  
CREATIVE POWERS

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Thomas R. Blakeslee

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# THE RIGHT BRAIN

*To Maureen—whose ideas, patience, and  
hard work made this book possible*

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*Part I*

# THE RIGHT-BRAIN REVOLUTION



## YOUR SILENT PARTNER

In this age of computers and space travel, our understanding of our own mind is as erroneous as the ancients' idea of the earth as a flat surface. We have been fooled by a powerful illusion of mental unity into ignoring and misunderstanding the thoughts, knowledge, and emotions of half of our brain. Just as mankind was fooled for centuries by the "obvious" flatness of the earth, we have accepted a false understanding of our minds based on what we seem to see clearly when we look at our own thoughts.

The misconception in both cases results from the fact that we see so clearly only a *part* of the picture: When we look at the terrain around us, the earth looks convincingly flat, yet other less visible evidence proves that the earth is actually a sphere spinning through space. Likewise, when we examine our thoughts, we use a process called introspection to report *in words* what we see. Naturally, a verbal examination of our thoughts will reveal only thoughts that can be expressed in words.

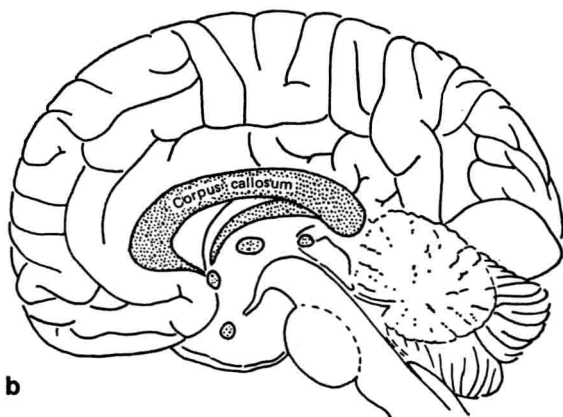
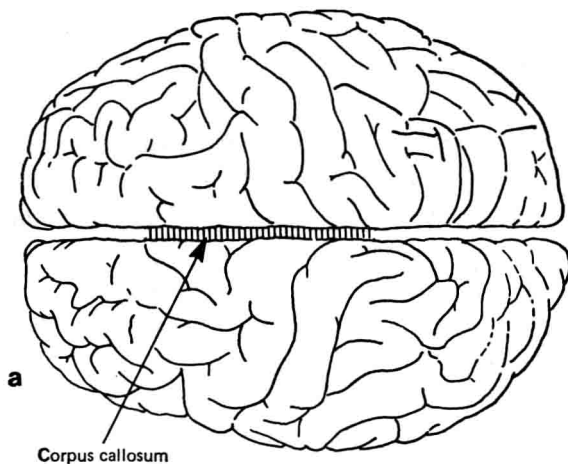
Scientific evidence now indicates that only the left half

of our brain is capable of expressing its thoughts in words. The right side of the brain has its own separate train of thoughts, which are *not* in words. Though these nonverbal thoughts are a crucial part of our personality and abilities, they continue to be ignored and misunderstood because they are so difficult to translate into words.

Since the right side of the brain is capable of controlling our actions, solving problems, remembering things, and having emotions, it fully qualifies as a mind by itself. In spite of this fact, we have continued to look at our mind as a singular entity that thinks only in words. And just as the "flat earth" model produced a number of paradoxes that required mystical explanations, the single-mind model makes the human mind seem much more mysterious than it is.

When you look at a human brain it is difficult to see how people could ever have thought of it as the physical basis of a singular "mind." For the human brain is clearly a *double* organ consisting of *two identical-looking hemispheres* joined together by several bundles of nerve fibers.

If the human mind is really singular, then how could it reside in two places at once? Certainly the billions of neurons in the two hemispheres are not so identical that they can simultaneously conceive identical thoughts on each side. Yet if the human mind resides strictly in one of the hemispheres, what could the equal amount of brain power in the other hemisphere be doing? Evolutionary forces simply do not allow the kind of waste that would be represented by having one hemisphere sit idle. In fact, measurements of the rate of metabolism of the two hemi-



# 1. The Human Brain

(a) Top view of left and right hemispheres (cortex)

(b) Right hemisphere only as seen from the midline.

The shaded areas are the neural connections between left and right which are cut in the split-brain operation.

spheres indicate that both are doing the same amount of work.

For almost a century we have known that human powers of speech reside primarily in the left hemisphere:\* Injuries on the left side cause speech damage, while right-brain injuries leave speech intact. In spite of this understanding, we have only recently begun to appreciate how the functions of the brain are actually divided between the left and right hemispheres.

The real breakthrough in this understanding came in the 1960s when Dr. Roger Sperry and his students Michael Gazzaniga and Jerre Levy began their historic split-brain experiments. In these experiments, they were able to test separately the thinking abilities of the two surgically separated halves of the human brain. They found that *each half of the brain has its own separate train of conscious thought and its own memories*. Even more important, they found that *the two sides of the brain think in fundamentally different ways*: While the left brain tends to think in words, the right brain thinks directly in sensory images.

The two halves of the brain thus have a kind of partnership in which the left brain handles language and logical thinking, while the right does things that are difficult to put into words. By thinking in images instead of words, the right brain can recognize a face in a crowd or put together

\* For simplicity we will temporarily ignore the fact that about 5 per cent of the population (one third of all left-handed people) have speech in the right brain and nonverbal thinking in the left. This is discussed further in Chapter 7.

the pieces of a jigsaw puzzle, which would totally baffle the left brain.

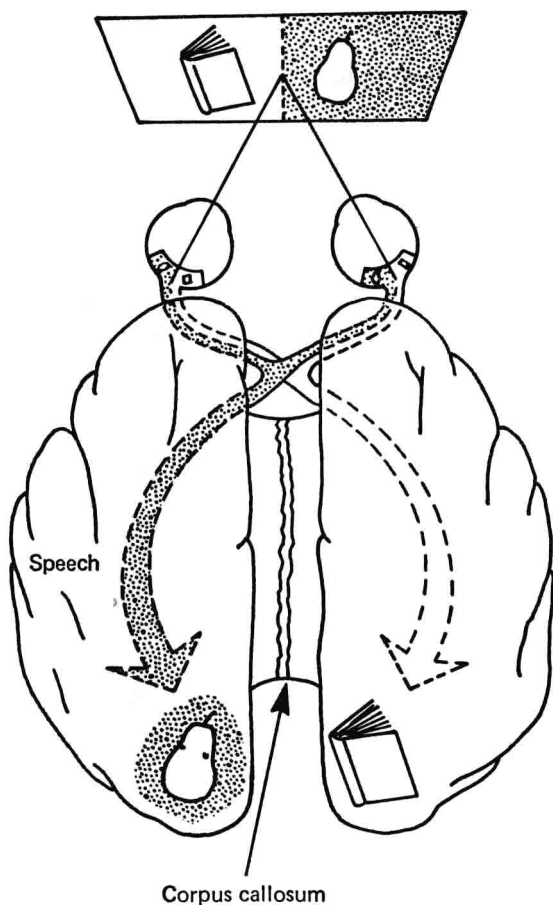
### *A Left-Right Division of Labor*

In all mammals there is a natural left-right division of labor which is inherent in their neural "wiring": Each half of the brain is connected only to the *opposite* side of the body.<sup>†</sup> Vision, sense of touch, and movement on the right is thus the job of the left brain and vice versa. The nerve connections between the hemispheres (see Figure 1) make it possible for each to exchange information so that either hemisphere can directly or indirectly enable one to see, feel, or move on either side of the body.†

Split-brain patients, however, have had an operation in which these nerve connections are cut (to prevent the spread of epileptic seizures). As a result *the hemispheres of their brain are totally isolated from each other, and each hemisphere can see, feel, and move only the opposite side of their body*. Though the split-brain patient still appears quite normal to the casual observer, closer examination shows that he acts very much like two separate people in one body. The "person" that we can talk to (his left brain) sees and feels only on his right side. His left hand and left field of vision are controlled by a separate mind (his right

† For example, the left hemisphere has direct neural connections to the right side of the body. It can also move the left side of the body indirectly by sending movement commands across the corpus callosum to the right hemisphere. Left-side vision and touch information is also available because the right hemisphere sends it across via the corpus callosum. (See Appendix II for a summary of left-right nerve connections.)





2. Optic nerve connections in a normal person connect only half of the visual field to each hemisphere. If a person fixes his eyes on a point, the right hemisphere will see only things to the left while the left hemisphere will see things to the right. Normally the left and right hemispheres inform each other of what they see via the corpus callosum; but in split-brain patients, separation of vision is complete.