

BY DR. IRWIN ROSS

The human brain is one of the most wonderful things in the entire universe. Most of us think of it as a delicate mechanism, which it is; but it is also sturdy and durable, a far more useful tool than is generally realized.

Here are five important facts, some turned up by recent research, which can help you to use your brain more efficiently.

1. Is there such a thing as "brain fatigue?"

Laymen often speak of "mental fatigue," thinking that long, concentrated mental effort produces tiredness in the brain itself. Yet scientists believe that this state cannot exist. Your brain is not like your muscles. Its operations are not muscular but electro-chemical in character, comparable in part to a direct-current wet-cell battery.

When your brain appears tired after hours of mental work, the fatigue is almost certainly located in other parts of the body, your eyes, or the muscles of your neck and back. The brain itself can go almost indefinitely.

What seems like mental fatigue is often merely boredom. In reading a difficult book, for example, you are torn between the desire to go on and the impulse to stop. It often is not fatigue that you feel but inattention and the inability to ignore distracting thoughts.

2. The brain's capacity is almost inexhaustible.

That part of your brain involved in thinking and memory, and all your conscious activities, has as its most important part 10 or 12 billion minute cells. Each of these has a set of tiny tendrils by means of which an electro-chemical message can pass from one cell to another. Thinking and memory are associated with the passage of these electrical currents. Quite possibly, people in general employ only 10 to 15 percent of their brains' capabilities.

How the brain stores its memories is still not fully known. Some scientists believe that each item of memory is contained in a loop of cells connected by tiny tendrils with an electrical current going around and around the loop, which might be hundreds or thousands of cells in length. Other theories suggest that the memory is somehow impressed, or *etched* on the cell, or exists on a chain of cells like knots in a string.

Be that as it may, the number of items that can be remembered is far greater than the total number of brain cells. After 70 years of activity, the brain may contain as many as 15 trillion separate bits of information. Thus your memory is a trea-

sure house whose size and strength are almost beyond human comprehension.

3. Age need not prevent your learning.

One of the commonest misconceptions about the brain is that as you grow older something happens to it so that further attempts to study are difficult. This is true only to such a minute extent that for most of us it is of no practical importance.

You are born with all the brain cells you will ever have; a few of them die from time to time, and are not replaced. Except in the case of a serious brain disease, however, the number that die is negligible.

Do you know your brain's unrealized powers?

It is true that all old people suffer impairment of their physical powers, and that some experience a decline of mental power. The best current medical opinion is that, in both cases, what happens is a series of minor "accidents" to various parts of our marvelously complicated physiological mechanism. None of these may be serious by itself, but the total effect can be severe.

Yet severe mental impairment occurs only in part of the elderly generation. Everyone knows of men and women who are vigorous and alert mentally into the ninth or even the tenth decade of life. Their existence proves that impaired mental powers are not an inevitable accompaniment of the passing years, but a result of disease processes.

Science knows of no reason why the average person cannot continue to learn with at least 85 to 90 percent efficiency through the seventh decade and beyond. It would be a fine thing if retired people went back to school or college or began to learn new skills and subjects. On the false notion that they are "too old to learn" millions of elderly people cut themselves off from exhilarating intellectual adventures.

4. Your mental powers grow with use.

Like the muscular system of the body, the brain tends to atrophy with disuse, and to become better with exercise. This is proved by the fact that if the optic nerve is

destroyed early in life, the brain cells in the corresponding visual area of the brain stay undeveloped.

As your brain matures, the nerve fibers are surrounded with a fatty substance called myelin, and they do not function properly until this has taken place. A newborn baby lacks most of its myelin, which is one reason why we cannot remember much that happened before we are two or three years old. Many physiologists believe that intensive exercise of any part of the brain encourages the growth of additional all-important myelin.


Anything you do with your brain exercises it, though obviously there is more exercise in doing something difficult than something easy. The more reasoning you do, the easier it is to go on to new reasoning. The ability to memorize also improves with practice.

Every aspect of your personality is stored in your brain. This includes your will power, which is also developed by practice. Each time you exert your will to drive yourself to the completion of an unpleasant or irksome task you make it a little easier next time to do what you need to do.

5. The storehouse of the unconscious mind.

The most wonderful part of your mind is undoubtedly the unconscious, which lies below the recoverable memory and is thousands of times larger. We don't yet know very much about the unconscious mind, but we are learning fast and someday may know how to tap its great powers.

Your unconscious mind contains many millions of past experiences that, so far as your conscious mind knows, are lost forever. By means of several devices we now know how to bring back lost memories. One method is "free association," used by psychiatrists. If a patient lets his conscious mind wander at will, it can give him clues to forgotten things which, skillfully pursued by the doctor, will bring up whole networks of lost ideas and forgotten terrors. There are certain drugs which also help in this process; hypnotism, too, can be of tremendous value in exploring a patient's unconscious.

We can make more use of our unconscious minds. Innumerable people have found that they can profitably "talk to" their unconscious. Some people find that they can bid themselves to wake up at a certain time in the morning. You can sometimes even improve your tomorrow's mood if you will say to yourself when you go to bed—and believe it—that you will be more cheerful in the morning. 

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