PSYCHOLOGY

Jimmy and Johnny Are Both Trained Now

Baby Who Became Athlete Before He Was Two Years Old Is Now Receiving Competition From Twin Brother

JOHNNY, the famous twin baby who has been trained by a psychologist from the time he was 20 days old until he was 22 months, no longer so greatly outshines his untrained twin in athletic prowess, Dr. Myrtle B. McGraw, his instructor, told psychologists attending the meeting of the American Psychological Association.

For Jimmy, the other twin, who has lived the normal life of the ordinary protected baby, has now been given his turn at special training. Some things he picked up in short order. One of these was tricycling, which Johnny had had considerable difficulty with some months earlier. Jimmy's greater maturity was apparently of great value to him in mastering this art of pushing one foot after the other, which is something of a stumbling block to younger gentlemen.

For other activities, such as skating, his advanced age did not help a bit. In these matters he made no more improvement during his two months and a half of training than his twin Johnny did in the same length of time at a much earlier age.

Jimmy was hampered in learning some of the stunts by his uncooperative attitude, and in these he showed rapid improvement as soon as he was taught to be more acquiescent, Dr. McGraw reported. However, during his training period of 2½ months it was not possible to emancipate him entirely of the reticence acquired during the earlier months.

Effect on Attitudes

The attitudes of the two children have been more strikingly different right along as a result of the experiment than have their abilities. Johnny seemed to develop from his training and consequent achievement an attitude of confidence and cooperation. He was always ready and willing to "try anything once." Jimmy, on the contrary, was hesitant and diffident about trusting himself in new attempts.

Whether these attitudes will persist as the boys have more similar experiences and are no longer subjected to systematic training schedules only time will reveal.

"An individual's life is not made or marred by his experiences during the first two years." This is one of Dr. McGraw's conclusions which should be of comfort to concerned parents. "Barren environment during the subsequent years may more than offset the good beginning in the same way that a drought may completely ruin a fine start toward the production of perfect corn."

Training at the Right Time

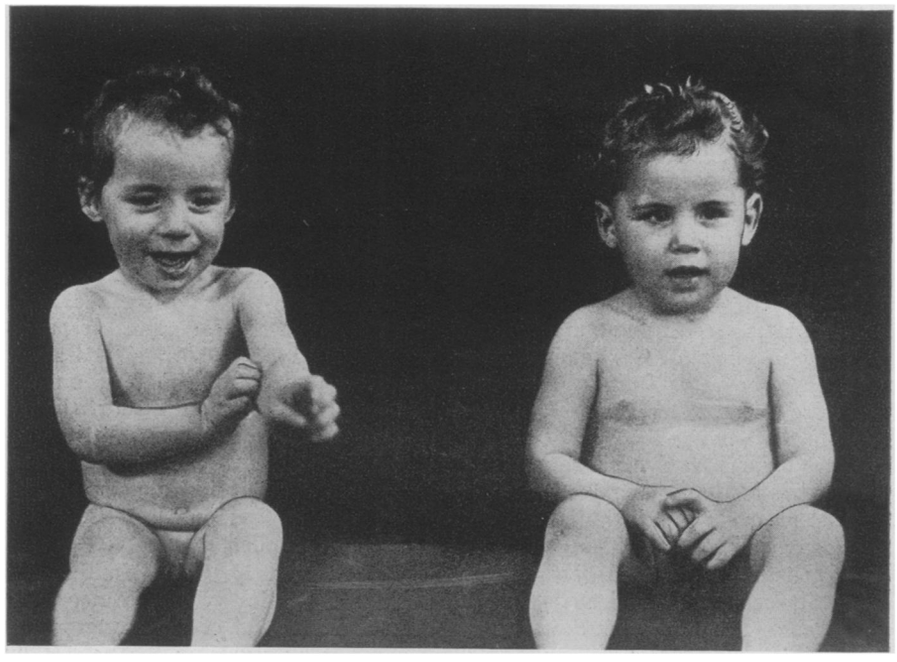
There are critical periods when certain types of skills or knowledge can best be learned, she found. This conclusion is pointed to by Jimmy's ease in learning what Johnny had found difficult at an earlier age. One chief reason for Johnny's rapid learning was the fact that his instructor seized on the "psychological moment" for his training.

As soon as he was seen to push furniture about the room, Dr. McGraw would devise situations providing incentives for his developing this ability, as well as discrimination in different sizes of the stools and boxes. She used a series of stools and boxes graded in size. A toy or cookie would be placed just out of Johnny's reach and he was urged to get it by pushing together two or more stools or boxes in order to climb up on them and thus compensate for his short stature. Soon he was pushing them about and climbing on them at a great rate.

Interests the Cue

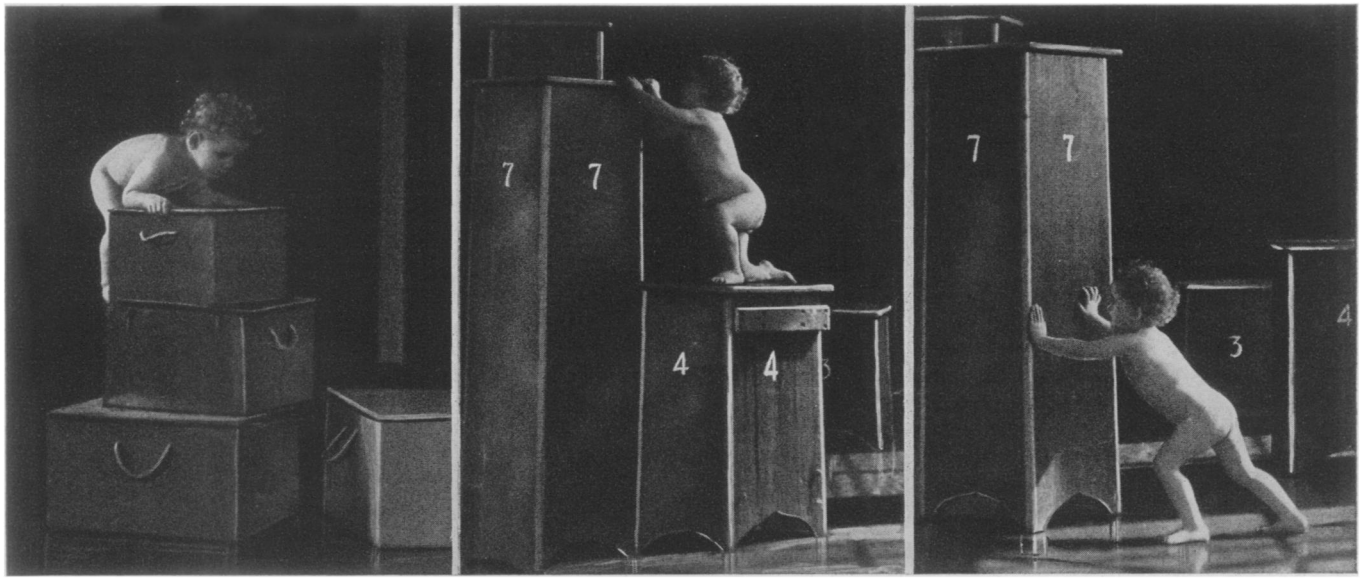
As soon as he revealed a budding interest in games of hide and seek, a course of memory training was started for him. He was encouraged to hide objects, and then after he had played about for a while with other things, was sent to find the hidden toy. Gradually the task of remembering where he had put it was made more difficult by increasing the number of diverting activities intervening between the hiding and the seeking.

Dr. McGraw objects to the term



JIMMY AND JOHNNY GROW OLDER

Can you tell which is the trained twin of this famous pair who have made psychological history? They are now big boys, two and a half years old. It was Johnny (right) whose intensive training under the direction of a psychologist began at the early age of 20 days. This photograph and those on the opposite page are the work of Lena Towsley, New York photographer of children.



JOHNNY GETS WHAT HE WANTS

Since the time he was only 20 days old, this twin boy, Johnny Woods, has been trained to use his muscles and to go after what he wants. His brother was not trained until he was 22 months old. When these pictures were snapped, Johnny was after a banana tied to the ceiling light high over his small head. The stunt of combining the boxes and climbing up as shown in the picture at the left, and of pushing the stools about until it is possible to climb from one to another until the top of the highest is attained is an ability which is greatly increased by training at the proper time.

"conditioning" as applied to the training method she used with these babies.

"Of course the term conditioning has acquired such a loose usage that it has come to mean almost anything, but the method of training employed in this experiment in no way resembled the conditioning technique made famous by Pavlov in his experiments with dogs or that used by Watson and Jones in their experiments with infants," she explained. "Instead we attempted to stimulate the infant to exercise repeatedly those abilities of which he at the time showed some capability."

Science News Letter, September 22, 1934

MEDICINE

Enzymes May Help the Body In Battle Against Cancer

A SUGGESTION that the changing enzyme content of various organs of the body during the development of a cancer tumor may represent defensive mechanisms of the body to prevent further malignant growth was advanced before the American Chemical Society by Dr. E. F. Schroeder and Dr. Ellice McDonald of Pennsylvania University's cancer research laboratories.

Future treatment of cancer may be directed toward methods of artificially stimulating the enzyme activity of an organ to aid this apparently natural defensive mechanism of the body, it appears from Dr. McDonald's discussion.

Speaking before the symposium on the chemistry of enzymes, the Pennsylvania scientists traced their recent work on analyzing the enzyme content of cancer tumors and such organs of the body as the kidneys and liver.

Enzymes are the biological chemical catalysts which make possible chemical reactions without entering into the reactions themselves.

The enzyme arginase, declared the scientists, occurs in large amounts in cancer tissue and appears to be closely associated with rapid growth processes like those found in necrotic tumors. Other rapidly-growing tissues, like those of an embryo, also contain arginase, and as growth slows down the arginase content decreases.

In studies on rats given cancer by implantation it was found that the faster a tumor grows, the more necrotic or degenerated it becomes and the higher mounts its arginase content.

At the same time the arginase normally present in the liver decreases as the tumor grows.

For two other enzymes, cathepsin and phosphatase, the action works in a reverse sense. Their content in a tumor diminishes as the cancerous growth becomes more necrotic.

The work suggests two pictures of enzyme cancer mechanism, Dr. McDonald declared in concluding.

"The interesting question is raised as to whether these enzyme changes may not be related to a specific immunological reaction against the growth of cancer. For example, the high kidney phosphatase of resistant rats might act as a defensive mechanism against further growth of the tumor.

"Or from another point of view, the implanted cancer tissue might liberate into the blood stream certain enzyme activators, or stimuli, which would cause other organs to respond by setting up a defensive mechanism in the form of increased enzyme activity. If the stimulus is sufficient the animal may throw off the cancer; if not, the cancer grows. This opens an interesting field in the possibility of artificially stimulating enzyme activity of an organ as a defense against further growth of the cancer."

Science News Letter, September 22, 1934