

# Psychologists Told How Monkeys Judge Time

Emily C. Davis reports here some of the important subjects discussed at the Columbus meeting of the American Psychological Association in Columbus during Christmas week.

Two little monkeys whose names for publication are abbreviated to A and P. have assisted a psychologist to demonstrate that monkeys can judge time. They have also shown that if they are typical examples of their kind the feminine monkey has a little better sense of time than the masculine.

The two monkeys learned not to reach for a piece of banana displayed in a tin can, when a sound hammer measured off a second and a half interval just before the can was shown. And they learned to take the banana out of the can when four and a half seconds were sounded off just before the food appeared. Dr. Herbert Woodrow, of the University of Oklahoma, said that after 2,600 trials the female monkey, A, responded correctly in 92.5 per cent. of instances, and after 3,600 trials, monkey P, the male, made a record of 90 per cent. The experiment was conducted for a short time each day, for more than a month.

The monkeys were discouraged from making the wrong response chiefly by scolding, and being told, "No," Dr. Woodrow said. After about five days, monkey A began to bat with her paw on the screen which covered the can while the time interval was sounded. This batting, Dr. Woodrow stated, was quite irregular, but it developed into a habit, so that she batted once or twice during the shorter interval, and much oftener during the longer interval. As a result of being scolded when she reached for the food at the wrong time, this monkey developed a vacillating type of behavior, reaching out and fingering the rim of the can even when she finally decided correctly not to try to take the banana.

Monkey P, towards the last days of the experiment, began to pull at the brown felt on which the food can rested, and after that pulling at the felt became his regular procedure. If the correct response was to take the food, he would pull at the felt and then quickly seize the banana and eat it. If the signal was not to take it, he would pull at the felt and then rest his paws on the bars of the cage.

Chimpanzees have memories, though whether they work like those of human beings is not yet determined. Dr. Robert Yerkes, of Yale, reported that in his latest experiments with four

chimpanzees they remembered for several hours in which of four boxes food would be placed. One of the animals learned to distinguish between boxes of different colors, but this was a more difficult task. The two female chimpanzees markedly outstripped the males in memory, Dr. Yerkes said.

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## Musical Test to Indians

Do Indian children have especial musical ability, any racial heritage from their tom-tom playing and their dancing ancestors? Tests of musical ability which have been given to white children have also been tried on 550 Indian boys and girls of 27 different tribes, by Miss Rachel Isbell, of the University of Denver, and the Indians excelled the white children in some respects.

In pitch and memory the Indian is inferior to the white, Miss Isbell found. In rhythm the Indian children were slightly better than the white, but not enough to be called a racial difference.

In their sense of time the Indian boys were much better than the white children, while the Indian girls were somewhat inferior, Miss Isbell said. This might be explained, she added, on the basis of training, because the Indian men are the ones who take an active part in the ceremonial dances. In intensity and consonance the Indian children rated about the same as the white.

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## Social Intelligence Useful

Success or failure in life is very largely determined by the ability to get along with others, and in no trait do people differ more than in this ability, Dr. Fred A. Moss, of George Washington University, declared.

A test of social intelligence, devised by Dr. Moss, has been given to several thousand individuals. The highest possible score on the test is 160 points, and the highest record so far made is 145, scored by a college boy who expects to go into politics.

Executives who took the test scored the highest as a group in this ability to react intelligently to social situations, Dr. Moss found. The medium, or middle, score for the group of executives was 117. Teachers made 112, salesmen 107, clerks and stenographers 95, sales clerks 81, nurses 78, and low grade industrial workers 65.

Dr. Moss's test measures the in-

dividual's judgment in meeting social situations, his ability to appreciate the mental state back of spoken words and back of facial expressions, his understanding of human motives, and his ability to remember names and recognize faces.

The scores indicate that ability to get along with other people may be developed, unlike mental ability, which is generally believed to be unchangeable. High school students scored only 83 on the test, while college freshmen made 104 points, upper classmen 114, and graduates 116.

Although not designed particularly for that purpose, the test seems to be useful in predicting school success, Dr. Moss said. In many subjects the teacher grades his students largely according to his personal estimate of their knowledge and ability, and in these subjects it is often better to know the instructor and his pet interests than to know the general subject matter of the course, he pointed out. The student who has a keen social understanding, therefore, is likely to make better grades than the one who blunders in understanding and dealing with other people.

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## New Spelling Test

The old-fashioned spelling bee at which supremacy in spelling was fought over and proved by reeling out triple-jointed words can now be replaced by a much simpler ordeal. A new scientific test to measure spelling ability, devised by Dr. J. E. W. Wallin, of Miami University, is described.

A child who possesses marked spelling ability ought to be able to spell phonetic words of increasing difficulty without much instruction after he has mastered the simple mechanics of spelling, Dr. Wallin said, but he might not be able to spell unfamiliar words that are spelled quite differently from the way they sound. Reasoning along this line, he selected a list of 459 words that are spelled just as they sound and had them tried out on more than 5,000 school children from the second to the eighth grades.

A child who can spell correctly all the words in the test that children of his grade usually get is an average speller. If he can spell more difficult words he is a superior speller, and his degree of superiority can be gauged by the extent to which he ap-

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## Psychological Meeting

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plies his simple knowledge of spelling to working out the phonetic spelling of longer and unfamiliar words.

General intelligence tests are useful in predicting a child's capacity for general education, Dr. Wallin said, but special tests are needed to diagnose a child's possibilities in each type of learning, and such tests should be given early in the child's school career.

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## Mail Order Psychology

Should psychologists attached to universities give a personal analysis service to clients by mail? This problem was argued at the closing session of the association.

The public is asking for help in developing personality to the best advantage, and reputable psychologists should begin to give this help in a conservative way, was the stand taken by Dr. Forrest A. Kingsbury, of the University of Chicago. Dr. Kingsbury read a paper reporting the establishment of a Personal Analysis Bureau, which gives tests to clients by correspondence, and attempts to show them their personality resources and possibilities. The institution is new and is still in an experimental stage, he said.

Applied psychology has not reached a stage where we can give tests of intelligence and personality by mail with any hope of obtaining a complete picture of an individual, Dr. M. L. Reymert, of Wittenburg College declared. Such an enterprise by professors in responsible positions in European universities would be unthought of.

The Psychological Corporation was organized by prominent psychologists several years ago in order to give vocational and personal assistance of this sort, Dr. C. A. Ruckmick, of the State University of Iowa, pointed out. Members of the corporation handle cases only by direct consultation, as a doctor does, he said.

The entire burden of selecting employees cannot be left to psychology tests, Dr. Sadie M. Shellow, industrial psychologist, of Milwaukee, said, in a paper on the importance of interviewing job candidates. Personality is so complicated that it will probably never be possible to measure it completely by paper tests, she said. An interview with a representative of the firm is a shock absorber, which puts the applicant for work at ease and brings out significant angles of personality not measured by tests.

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## To Repeat Experiments

A successful attempt to confirm some of the experiments of the great Russian psychologist, Pavlov, was reported by Dr. H. S. Liddell, of Cornell. Some of his famous experiments have never been repeated in this country, and some have been tried unsuccessfully. Dr. Liddell used sheep and goats to test principles of neurological excitation and inhibition established by Professor Pavlov on dogs. A nervous disturbance was artificially produced in the animals, and the results verify the Russian's theory of brain function, Dr. Liddell reported.

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## Environment Important

A remarkable investigation indicating that environment plays a bigger part than heredity in making us the sort of individuals that we are was reported before the American Psychological Association by Dr. Frank N. Freeman, of the University of Chicago. Four hundred little children taken from poor and undesirable homes and placed in foster homes were used by Dr. Freeman to test the power of environment to alter mental development.

The heredity of the children was extremely bad, Dr. Freeman said. A large percentage of the fathers and mothers were mental defectives and moral defectives. In spite of their bad start in life, children placed in good types of homes gained on an average ten points in their intelligence quotient, which measures their mental ability. Ordinarily, a child's mental ability remains at its own level, whether he is normal, or superior, or dull. Dr. Freeman's investigation indicates that change of homes may change this development, however. The vast importance of the first years of a human being's life was shown by the fact that children adopted before they were four years old made striking gains in their mental age level, whereas children adopted after four years scarcely changed in this respect. Children who were taken into homes of a poorer type, with few advantages, remained at approximately the same mental level.

Mothers are beginning to worry over the normality of their children, Dr. Florence Mateer, of Columbus, said; and because of this a new kind of psychologic clinic is developed which will help normal children make the most of their possibilities. Out of one hundred average and superior children of pre-school age, all but

eleven had some peculiar individual problem of behavior or mental twist that needed adjustment, she reported. The true test of a normal child is his ability to meet his own problems successfully and quickly, once they are pointed out to him.

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## International Congress Here

The International Congress of Psychology will meet at New Haven in the summer of 1929, it was announced. This is the first time that this important gathering of psychologists has selected the United States as its meeting place. Dr. J. McKeen Cattell, of New York, well-known psychologist and editor of *Science*, will be president of the congress.

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Some ancient warships had 16 banks of oars.

An oyster produces about 50,000,000 eggs.

Red appears to be the first color noticed by a baby.

Prehistoric men in Europe used birchbark for candles.

Diamonds in the world represent a value of probably \$5,000,000,000.

A monoplane with 12 engines which will carry 60 passengers, is being built in Germany.

In the influenza epidemic of 1510, it was said that scarcely a family in Europe escaped the disease.

In the earthquake of 742 A. D., more than 500 towns in Palestine and Asia were destroyed.

When iron was first used in shipbuilding, many people insisted that it could not be expected to float.

The population of Manchuria is only 61 persons per square mile, as compared with 390 in Japan and 301 in Korea.

Canada estimates that each woodpecker is worth \$20 to the country as a means of protecting trees against insect pests.

Increasing crop yields on American farms show that the older farm lands are not wearing out, as has been sometimes stated.