Skill Comes With Growth

Psychology

Some sorts of learning and behavior depend upon natural growth processes rather than training, it was determined by unique experiments upon identical girl twins performed by Dr. Arnold Gesell and Dr. Helen Thompson of the Yale Psycho-Clinic.

Twin girl babies were kept under observation from one month to eighteen months of age. They lived together in a nursery home. They were healthy, good-natured, and remarkable for their sameness.

"The apple cleft in two is not more twain than these two creatures, using the language of Shakespeare who was himself the father of twins," Dr. Gesell said in explaining that these identical twins have established a new method of study, known as "the method of co-twin control."

One twin was taught for 20 minutes daily over a period of six weeks how to climb stairs and play with small red blocks. The other twin was not allowed even incidentally to do these things. At the end of the period when both were a year old, the trained Twin T was very proficient in stair climbing and the control Twin C could not scale the four-stair staircase even with assistance. But a week later Twin C, again given a chance, climbed right up without training or assistance. Two weeks of training given Twin C made her equal to Twin T in skill. Motion pictures of each twin at each test showed the investigators that Twin C climbed better at 55 weeks of age than Twin T did at 52 weeks. Although Twin T was trained three times longer and seven weeks earlier, this advantage was overcome by three weeks of added age on the part of Twin C. In playing with cubes the training of one twin gave no advantage in skill over her sister.

Such tests may have important influence on educational methods. Drill and repetition may not be effective if given when the child has not developed sufficiently.

"Training somewhat hastens and perfects the manifestations of skill," said Dr. Gesell, "but it is well to recognize that all forms of skill can rest only on a solid basis of behavior capacities which are determined by natural growth processes. The fundamental problem of educational psychology is to bring training and natural maturity into the most fruitful relations."

The identity of the twins used in this novel experiment was remarkable. Not only were they indistinguishable in physical appearance but the patterning of the skin ridges of hands and feet were alike in detail. Mentally and tempermentally they were so nearly the same that out of 536 comparative tests, in 471 of them they were almost completely identical.

Science News-Letter, January 26, 1929

Ultraviolet in Country

Physics

The amount of ultraviolet light in the country is actually half again as great as in the city. This has been known or suspected in a general way for some time, but now scientific proof of it has been made by J. H. Shrader, H. H. Coblentz and F. A. Korff, working at the Baltimore Department of Health. The figure reported is the result of actual measurements, based on chemical tests. They were made in the center of the city, in nearby suburbs located about three miles from the city's center, and in the country on farms ten miles from the municipal center.

Measurements of the amount of dust polluting the air were made at the same spots. These showed that air pollution affects the amount of ultraviolet light. The pollution was heaviest in the city and diminished to a figure about one-sixth as great in the country. The amount of dust settled on the top of skyscrapers was less than the amount at the street level, and the amount of ultraviolet light on the top of the buildings was greater than that at the street level.

The kinds of dust polluting the air were examined. Carbon, in the form of tarry products, kept out more of the ultraviolet light than ordinary dust or street sweepings.

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