

Infants See Shape Early

The belief that infants' eyes are too immature to see patterns has been overturned

► THE MOTHER who insists her newborn baby can see shape and form, despite all she has been told to the contrary, now has the backing of two studies on infant development.

From birth, babies consistently choose to look at patterns rather than at blank squares or colors, which means they can see them, reported Dr. Robert L. Fantz of the Western Reserve University in Cleveland.

His study of hundreds of infants overturns the long-held belief that infants' eyes are too immature to see anything but brightness, color and size.

In a separate study, Dr. Peter H. Wolff of Harvard University Medical School has demonstrated that infants are capable of fixing their attention, even in the first week after birth. Together the two investigations point up how infant capabilities have been underestimated in the past.

They reveal an innate human interest in the complex and the novel—an interest which is evident from birth.

To collect his data, Dr. Fantz devised an ingenious method of peering into the pupils of babies' eyes and observing the reflections there. When he saw an image fixed directly on the pupil, he surmised the baby was seeing that picture.

Whether or not the picture means anything to the infant is irrelevant said Dr. Fantz. The important point is that he has an innate, unlearned interest in patterns.

Newborns appear to be most attracted by linear arrangements—checkerboards or stripes, Dr. Fantz found. At three months of age, their interest shifts to a more complex, random pattern, probably due to learning or maturation of the brain.

This preference for patterns makes sense, said Dr. Fantz, when one considers that the child later finds his way around the environment by the shape of things, not by their color. Thus, the early visual interest in patterns might mark a preparatory step.

In another test, Dr. Fantz found that newborns strongly prefer to look at the complete human face rather than at a blank oval or one with just the eyes. At two months, they sud-

denly develop an interest in the solid head, he said.

Dr. Wolff's intention was to discover whether the newborn has anything that could be called an "attention span." He found that it does. Of 30 hours of wakefulness a week that he observed, the psychiatrist clocked about three hours of intermittent attentiveness. By the fourth week of life, attention time has doubled.

That the week-old infant really does explore his surroundings visually is indicated by his quiet alertness. Though he is fully awake with eyes wide open, he is neither fussy nor moving around. He seems to be looking at things.

Dr. Wolff emphasized that such attentiveness comes only after feeding, not before. Evidently hunger and other physical discomforts interfere with it.

The two studies were published in the *Annals of the New York Academy of Sciences*, 118:793, 1966.

GENERAL SCIENCE

National Net to Monitor Human Pesticide Levels

► A NATIONAL network to monitor pesticide levels in the general population is being established by the Office of Pesticides of the U.S. Public Health Service.

The increasing use of pesticides in the United States means that human exposure to them through food and air is also on the rise. Just what kinds and amounts of these potential toxins are retained in the body and what harm they may do to health during the course of time is still undetermined.

However, medical research has shown that certain widely used pesticides definitely are held in body tissues and organs.

In order to establish and maintain broad surveillance of the amount of pesticides in people, a nucleus of 10 stations will be set up within the year.

Human fat, liver, kidney and brain tissues as well as blood and urine samples will be collected and analyzed with the help of physicians, hospitals and medical examiners in the urban centers where the monitoring stations will be located. The network will be expanded to eventually include 135 stations.

Operating criteria for the monitors will be established by the Midwest Research Institute, Kansas City, Mo., which has been awarded a \$59,500 grant by the Office of Pesticides.

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