ings about the task. Half the group was offered a $1 bill; the rest were offered a $20 bill. Subjects were asked afterward whether they really did find the tasks enjoyable. Interestingly, the students who had been paid one dollar stated that they actually did find the tasks enjoyable. There was little or no dissonance among the students who had been paid the $20, since, after all, they were well rewarded for their participation. The other students, however, had to justify having spent time doing useless tasks and getting only a dollar as a reward. They were the ones who were in a state of cognitive dissonance. By convincing themselves that the tasks they performed were not all that boring, they could rationalize having gone through what was essentially a waste of their time.

Cognitive dissonance soon became an important and much-discussed theory. Over the years it has generated considerable research, in part because it is one of a number of theories based on the idea that consistency of thought is a strong motivating factor in people.

Continues research at the New School

Festinger continued his work at Stanford until 1968 when he returned to New York City to assume the Else and Hans Staudinger professorship at the New School for Social Research. He continued his research on cognitive dissonance as well as other behavioral issues. He was also active in professional organizations including the National Academy of Sciences and the American Academy of Arts and Sciences. He continued to work until his death on February 11, 1989, from liver cancer. He was survived by his wife Trudy and four children.

George A. Milite

Further Reading


Fetal alcohol effect (FAE) and syndrome (FAS)

The adverse and chronic effects of maternal alcohol abuse during pregnancy on her infant.

The effects of heavy maternal alcohol use during pregnancy were first described as fetal alcohol syndrome (FAS) in the United States in 1973. An estimated one to three babies of every thousand births in the United States has FAS, making FAS the leading cause of mental retardation. It is also one of the few preventable causes of mental retardation and other birth defects. The U.S. Public Health Service estimates that between two and five of every thousand babies born in the United States exhibits one or more effects from fetal alcohol exposure. Although the precise amount of alcohol that must be consumed to cause damage is not known, it is believed that both heavy, consistent alcohol consumption and occasional binge drinking can produce FAS. In April 1997, the Centers for Disease Control and Prevention released the results of a study it had conducted in 1995. In a survey of 1,313 pregnant women, 3.5% said they “drank frequently” during pregnancy. (The agency defined “frequently” for the survey as having seven or more drinks per week, or binging on five or more drinks once within the previous month.)

Why some fetuses are affected and others are not is not completely understood. However, researchers believe that a combination of genetic and environmental factors work together to determine whether maternal alcohol consumption will affect the development of the fetus. Research has suggested that the genetic makeup of members of some racial and ethnic groups makes them less able to physically break down alcohol in the liver, and as a result, they are more susceptible to alcohol’s adverse effects. When alcohol passes from the mother’s bloodstream across the placenta to the developing fetus, the developing organs are unable to process it and thus are vulnerable to damage or arrested growth.

Women who drink heavily during pregnancy have a significantly higher risk of spontaneous abortion (known as miscarriage); their risk of miscarriage or stillbirth is at least twice that of nondrinkers. For the woman who carries the fetus to term (or near-term), researchers speculate
that, in addition to genetic factors, her nutritional status and general health will affect her ability to tolerate alcohol. Due to these and other factors, an estimated 40% of women who drink heavily during pregnancy will give birth to an infant with FAS; all women who drink large amounts of alcohol during pregnancy risk giving birth to an infant with fetal alcohol effects (FAE). FAE describes the condition where the visible physical effects of alcohol are less pronounced than with FAS, but where the learning and psychosocial characteristics are still pronounced. Both FAS and FAE produce lifelong effects that can be managed and treated but not cured.

FAS encompasses a range of physical and mental birth defects:

- Prenatal growth retardation (low birth weight, length, and head circumference); may have difficulty bonding with caregiver
- Low Apgar scores at birth
- Postnatal growth retardation (failure to gain weight and develop normally); may show signs of developmental delay, such as delayed walking, poor coordination, delayed language development, and problems with toilet training. FAE/FAS toddlers may be prone to irritability and temper tantrums.
- Intellectual and attention deficiencies
- Behavioral problems; may exhibit antisocial behaviors, such as arson, shoplifting, lying, defiance of authority, and destructiveness. FAS/FAE adolescents often become involved in inappropriate or unsafe sexual situations, brought about by physical maturity and emotional immaturity.
- Skull or brain malformations.
  Distinctive facial features may include:
- Small head (microcephaly)
- Small eyes with folds in the skin near the nose (epicanthal folds) and short horizontal eye openings (palpebral fissures)
- Underdevelopment of the upper lip with flat philtrum (ridges extending vertically between the upper lip and nose)
- Small jaw (micrognathia).

FAS/FAE is a lifelong condition that, depending on its severity, will limit the individual’s ability to function productively in the world. Early diagnosis and intervention with support and education services are the keys to success in social and vocational settings.

Further Reading


Fetal Alcohol Syndrome (FAS) and Effects: What's the Difference? Evanston, IL: Altschul Group, 1989. (For information: 1-800-421-2363) (One 24-minute videocassette.)


Figure-ground perception

The ability to differentiate visually between an object and its background.

A person’s ability to separate an object from its surrounding visual field is referred to as figure-ground perception. The object that a person focuses on is called the figure; everything else is referred to as background, or simply ground.

Psychologists have created different kinds of stimuli in order to study how people separate figure from ground. In some cases, these stimuli involve simple ambiguous figures like the famous face-vase figure that can be interpreted as two faces looking at one another or a goblet, depending on what aspect a person focuses on. In other situations, complex stimuli can be used to demonstrate figure-ground relationships. For example, the 3-D Magic Eye pictures involve relaxing the muscles of the eyes to see a three-dimensional figure-ground picture. Until a viewer positions the eyes appropriately, the stimulus is invisible; when the eye muscles are appropriately relaxed, the three-dimensional figure emerges. Easily distracted children are often unable to focus on one object as they ignore or block out the background.

The interpretations that people derive from these stimuli are real, even though the objects are ambiguous or are nonexistent. A good example of this involves illusory or subjective contours. In the illustration, people will see an entire square, complete with borders (contours), even though the borders do not really exist.

Psychologists have also demonstrated figure-ground principles with auditory stimuli. For example, some peo-