Studying Learning in the Womb

Research scientists who study the behavior of human infants believed until recently that the baby's world was, as psychologist William James wrote, a place of "booming buzzing confusion." But the picture now emerging is quite different. Babies have been shown to respond to their environment from the first day of postnatal life. They can discriminate between objects that they see and can even recognize their mother's voice. How and when does a baby learn these things? A relatively new body of data indicates that the learning begins before birth. This idea suggests a whole series of questions about how and when an unborn baby can learn.

These questions are now being addressed by a small group of developmental psychologists and behavioral neurobiologists who are studying fetal learning by using established techniques that can measure learning in adult animals. Their research, says Norman Krasnegor, chief of the human learning and behavior branch of the National Institute of Child Health and Human Development in Bethesda, Maryland, is of great practical as well as theoretical importance.

Research on prenatal learning offers a way to assess the development of premature infants, Krasnegor says. Babies weighing as little as 1000 to 1500 grams at birth (about 2.2 to 3.3 pounds) are now routinely cared for in newborn intensive care units, but physicians frequently find it difficult to predict which of these babies will develop normally and which will not and how to help those whose behavioral development is abnormal. By learning when during gestation different types of learning can occur, developmental behavioral neurobiologists hope to gain a new understanding of the functional organization of the brain prior to birth. Such research, Krasnegor remarks, should help psychologists and therapists to assess and to teach babies whose brains are injured as a consequence of premature birth.

In addition, the studies will undoubtedly be useful to research on behavioral teratology--the investigation of substances that produce birth defects of the mind. A few such substances, such as antiepilepsy drugs and large amounts of alcohol, are known. But to identify others researchers need refined knowledge of how the mind develops and whether there are critical prenatal periods for the learning of certain kinds of behaviors.

So far, the studies of in utero learning are mixed. One group of investigators is looking at the abilities of human babies to recognize voices and even poems that they first heard before they were born. Others are studying classical conditioning in fetal rats and mice. Still another researcher has a new way of observing fetal sheep that, he believes, should facilitate research on in utero learning. What each of these investigators is finding is that every time they look for fetal learning, it is there.

Anthony DeCasper, a psychologist at the University of North Carolina in Greensboro, says he began his studies of fetal learning a few years ago when he wondered why newborn human babies perceive sound so well. "I asked myself, "Why do we come into the..."
Studies had shown they can hear songs and learn sounds while in the womb. Now scientists show that fetuses can learn specific words, too. And for at least a few days after they’re born, babies can still recall commonly repeated words. This study doesn’t mean that fetuses and newborns understand those words. The scientists also tested 16 babies who had never heard recordings of the fake word while in the womb. These babies did not show the same surge when they heard the changed version of “tatata.” Earlier studies have used babies’ behavior — like sucking on a pacifier or turning their heads — to look for signs of learning. Importantly, this new study shows actual effects in the brain, notes Christine Moon, who did not work on the new study.

How does my baby learn in the womb? Is there anything I can do to help my baby learn in the womb? What is the approach to fetal learning in other countries?  

2010). What can my baby learn in the womb? Experts say that your baby will probably be able to remember certain sounds and tastes from the womb after she’s born. Towards the end of the second trimester, your baby starts to hear. While her main soundtrack is your heartbeat, breathing, voice, pumping of blood and gurgles of digestion, she can also hear muffled noises from outside your body. One study found that if music was played while mums-to-be relaxed, the same music would soothe their newborns. They ceased to cry, opened their eyes, and made fewer jerky movements (Feijoo J. 1981). Learning in the womb. What do babies learn before they are born? New tests have taken place to understand how unborn babies - called foetuses - learn language. It has been discovered that when babies are born they can already recognise familiar sounds and language patterns. Rob and Finn discuss this research in 6 Minute English. They also talk about how babies develop an accent at a very young age. This week’s question: According to a survey by the National Literacy Trust, which one of these words was discovered to be the most common first word for a baby to say - not including Mummy or D... developing, unborn babies. womb. place inside a woman’s body where a baby grows before it is born. communicate.