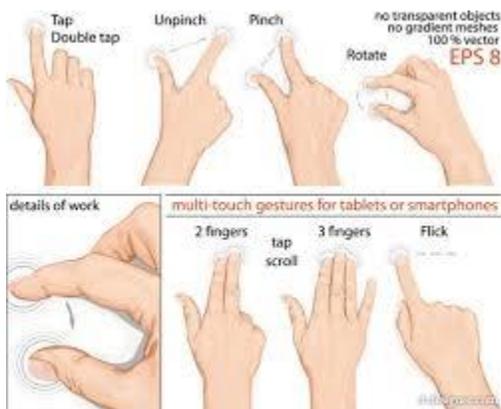


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Talk about excitement! Talk about opportunity! That's what the new brain research has given the field of early child development. For all of the parents, teachers, and researchers who have always known that the first few years of life were the most important to a child's development, it is wonderful to have our beliefs confirmed by a distinguished group of 'hard scientists.' It is also gratifying to see how the media have picked up on the new brain research and translated the scientific findings into language that everyone can understand and use. Within the past year or so, virtually every popular news magazine has featured a baby either on its cover or in a prominent article, along with suggestions to parents about ways they can enhance the development of their baby's brain.

A metaphor often used to communicate some of the new information is that we now know the baby's brain isn't 'hard wired' at birth. To stay with computer language, the 'hard drive' and the ports for connecting everything to everything else are there. But that isn't enough; an operating system and appropriate software will have to be installed. And that's where experience comes in. And, without the experiences that enable relevant connections to develop, it is as though the computer has been left in the box and never plugged in!

At birth babies have something like 100 billion neurons, give or take a few million. Many of these have already been connected on orders from the 80,000 or so genes we all have. These pre-existing connections help regulate basic physiological processes like heart rate and breathing. But trillions more will be needed to produce a talking/thinking/acting individual who can do things for himself or herself and, in time, show concern for the welfare of others. These interconnections in the brain are called synapses, and they don't just happen. Certain experiences are necessary to enable formation and strengthening of them. Without these critical experiences, the full majesty of the human brain in all its capability and complexity will simply not develop. Although new synapses continue to develop throughout our lives, the most rapid period of emergence is during the first four years of life.

Tools for Development

One of the miracles of life is that the baby is programmed to receive, and parents are programmed to give, precisely what the baby needs in order to complete the wiring of the brain—and the creation of a happy, productive, and caring human being in the process. We might call what we have to work with the tools for development.

- **Ourselves.**

Obviously we have ourselves to give our babies, but I mean this in a physical as well as a social sense. We have (hopefully) an already reasonably well-wired brain able to pick up signals as to when the baby is hungry, wet, cold, or otherwise uncomfortable. And we have strong arms to pick up and cuddle, to rock, to remove cold garments. We provide nourishment to assuage the insistent hunger pangs. We touch, providing the skin contact that is so vital to the infant. And we possess that most fascinating mosaic for inexperienced eyes—a face. Likewise, we possess a voice—the most appealing stimulus to untutored ears. Whatever else we are to our babies, we comprise a package of ideal stimulation possibilities. And, perhaps most importantly, we possess to a great extent the ability to control events in the baby's life so as to allow him or her to exist in a state of reasonable tranquility and contentment—a state essential for wholesome growth.

- **Physical world.**

We offer the food, the housing, the bed, the warmth or cold, the sounds and sights that become connected in those developing synapses. The physical world of the infant gets somehow into the brain, and seems to remain with remarkable tenacity; reflect on the loyalty and the nostalgia people often have to the place where they were born. Toys and playthings are a vital part of the physical world and are especially important for brain development. Perhaps more than anything else in the physical world, play materials help babies wire together information flooding the brain via sight and touch, touch and sound, action and sight. (You may be thinking, 'She says that because she is writing for the Fisher-Price Web Page.' But in my research over the years I have consistently shown that the availability to young children of play and learning materials is an essential ingredient of an optimally stimulating home.) Many years ago Arnold Gesell, the most famous pediatrician of his time, wrote, 'The mind of man is hand-made,' stressing the importance of eye-hand coordination for brain development. Eye-hand coordination is greatly facilitated by access to toys through which the infant can carry out multiple actions. Toys are critical tools for development.

- **Talk.**

I could have included talk under the first category above; certainly it is one of the components of the adult. However, it is so important that I pulled it out for special mention. The mind of man may be hand-made, but its rough edges are shaped and smoothed out by the sound of the human voice. One finds in the Bible, 'In the beginning was the Word'; so it is in the beginning of life. The infant hears certain sounds and relates them to visual and tactile images—a soft voice means she is likely to be picked up and fed; a harsh voice means a longer time of discomfort. He will ever after be able to distinguish and reproduce the sounds he hears. And as she begins to make sounds—sounds that approximate real syllables—a verbal response and a smile from a parent will increase the likelihood that she will continue to make those sounds and others. Gargantuan amounts of learning will go into the synapses from hearing things like, 'Good boy,' or 'No' or 'Stop that!' Talk—your talk—is a vital tool for helping to wire your baby's brain.

- **Time.**

The last tool I would remind you that you have is time. There is no substitute for the time you can give your infants as you help to establish good connections among all those ports that were in his brain at birth. We tend to think that a single teaching episode, one ‘No’ or ‘That’s fine,’ should be enough to create new learning. But how many of us learn really useful skills in just one trial? The same is true with infants. Time with you may be the most important tool you have at your disposal in your continuing efforts to help fully wire your baby’s brain for a happy and productive life.

The Tool Box

All tools need a tool box to go into, and so do these. If we made a decal to go on the box, we probably wouldn’t label it ‘Wiring the Brain,’ though we could. If we wanted to be both accurate and concise, we could probably just put one word on it— ‘Love.’ For these tools, taken collectively, represent manifestations of love for our children. We are wired to give it just as they are wired to need it. As we express our love for them, via the many actions in our behavioral repertoire and by the support we can offer from the physical environment, we are indeed wiring their brains. But we are also turning on the power that will help them become the best, the most productive, and the happiest human beings they are capable of becoming. In the process, we gain as much as they do. It is truly a win-win situation.