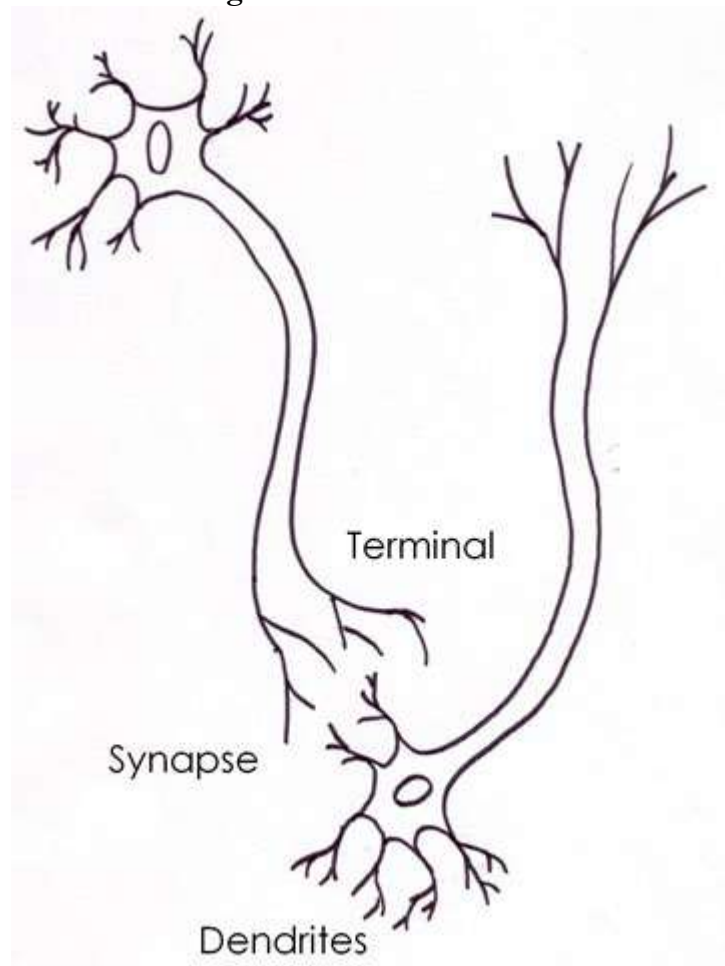


Faster than a Speeding Neuron

By the time a baby is born, they have already grown 100 billion neurons (brain cells). These neurons, that are present at birth, will be used for the rest of the baby’s life. At birth, the baby’s brain is 25% of its approximate adult weight. By age three, the brain has grown dramatically by producing hundreds of trillions of connections between neurons. These connections are called synapses, which form a complex control centre for sensing the world. They create the capacity for the baby to see, hear, move, taste and touch. More remarkably, synapses create the capacity to be human, to feel, to think, to love, to hate, to learn, and to do all the good things and bad things that one does. See **Figure 1** for an example of two neurons connecting with each other.

Figure 1. Two Neurons Connecting



The Nature/Nurture Dance

Every domain of development is directly related to the brain. Brain development is a complex interplay between the genes a baby is born with and a baby’s experiences in the world. Early interactions don’t just create a context for brain development, but they directly affect the way the brain is wired. They create the architecture of the brain. This is a dance between biology and environment that dramatically revisits the nature/nurture debate.

Love Grows Brains

The phrase, “Love Grows Brains”, heralded by neuroscientists, explains that it is only through loving relationships that infants learn. Through Mary Gordon’s earlier work setting up Canada’s first Parent and Family Literacy Centres, she came to the conclusion that the common denominator in all of the violence and cruelty in society was the absence of empathy. Empathy cannot be taught in traditional ways but can be “caught” experientially when school children experience the love between a parent and baby over a school year.

In the first three years of life, if a child gets consistent, predictable, nurturing and enriching experiences, the brain will have the foundational structures that will allow the child to have healthy emotional, behavioural and social functioning throughout life. If the baby has stress in the first years of life through experiences that are inconsistent, unpredictable, traumatic, or fearful, there will be changes in the developing systems in the brain that will make the child more vulnerable. A baby’s brain is the most sophisticated learning machine under the stars. Brain development is mediated by the parenting relationship. Of all the sensory inputs a baby experiences through the primary attachment relationship, touch is the most powerful in wiring the brain to create a competent and caring person who will be able to enjoy life, contribute to society and cope with life’s challenges. This has dramatic social, moral, and economic consequences for the quality of society. The quality of brain development today will dictate the quality of human development tomorrow. In our knowledge-based economy, human capital forms the basis of economic viability. Supporting a family so that they can give the responsive care required for optimal brain development is probably the best investment that a society can make.

“Love grows brains.” – Mary Gordon, Founder/President, Roots of Empathy