

THE INTEGRATION OF LANGUAGE AND MOTOR MOVEMENT:

How Vocabulary Growth Parallels the Growth of Human Response Systems

A brief introduction:

The course of one's language development parallels the degree of freedom (potential) of bodily muscle movements and motor control.

Years of R&D led Wellness, Inc, to notice that repetitive words (listened, spoken, written, read, or thought) introduce task-dependent constraints on the physical body as their encoded actions signal sensori-motor specific tasks for the body to process. Since the majority of words become linked to the body primarily through audio-visual, fine-motor learned skills, their repetitions myelinate different neuromuscular pathways than if one were to carry out their 'comparable' physical representations. This educational oversight unwittingly disembodies more fully balanced, integrated intelligence.

Man's long-term over dependency on language for instruction and communication has created an increasing need for **physical cognition**. For example, since words are symbolic representations that help direct the body's muscle responses, a society's predominant vocabulary will strongly influence how its populations **move**. The more mechanistic our vocabularies become, the more mechanistic our movements become. Our muscle responses to language begin in utero, and continue altering the body's response systems at mostly invisible levels throughout the person's life span. **Vocabulary cognition** thus becomes imperative.

Societies that increasingly depend on the rapid and continual generation of words for experience, rather than more balanced physical experiences, not only separate man according to his different language competencies, exposures, and conditionings, but can unwittingly build in their physical decline through the suppression (pruning and decreased myelination) of more balanced and stimulating physical movements. It is interesting to take note that animals are not subject to these rapid language altering dynamics, and many meditative practices are aware of the need to limit auditory chatter to calm and heal the body.

In summary, the body becomes unconsciously conditioned to physically respond to the 'nuances' of the language connections without becoming 'physically cognizant' of their encoded sensory-motor signals. Consciously changing the way one constructs his/her 'language memory bank' can help redefine a body's motor-linked memories. With this in mind, Wellness developed a kinesthetic alphabet for 3-6 year olds to pro-actively educate young children to develop a more physically interactive repertoire of early language-linked habits. This should lead to healthier, motor-related memory in literacy-oriented and increasingly sedentary, synthetically simulated environments.

*'It is a known fact that "Every time we use a **tool** to interact with our environment, such as a stick, [a ball, an alphabet, etc.] or a computer mouse, our brain assimilates properties of that tool onto neuronal space. **Tools are appendages which are incorporated into our body schema.** As we develop new tools, we reshape our brains." ..which in turn reshapes our bodies.'* - Dr. Miguel A.L.Nicolelis

"Today's brain is a consequence, not a precursor of symbolic language. Language can change our response system faster than evolution changes our genes". T. Deacon, Author, The Symbolic Species.

'If we look at a memory as a mathematical equation (algorithm) of the coordinate points of the body's muscle movements at any one point in time and space, then loss of that memory results from the inability of the body's muscles to put themselves back into that equation.'

*In "The Alphabet and the Goddess" one reads how missionaries changed the neurological response systems of those they taught to read, **conditioning language memory to predominantly linear eye movements and sequenced sounds.** The neurological adaptation to language as a learning tool was so dramatic that it initially made many of those people go crazy." - L. Shlain, author*