

## **Addendum 1: Sapien's Communications ( - - 1950)**

### **Communication Modalities**

**Note: "Sapien" = "Homo Sapien" = "Human Being"**

#### **Non-verbal communications**

Most mammals have a wide variety of non-verbal communication skills. A gesture, look, motion, or other method can communicate a wide variety of actions and feelings. Most of this involved sight.

Various audio sounds were also used by most mammals also to communicate various things.

Sapiens (Human Beings) utilized these non-verbal modes of communication for a very long time.

Then eventually, audio sounds were created that also communicated various nouns, verbs, and other concepts and activities.

This may be when Sapiens began to adapt to the environment and to dominate other species.

#### **Verbal Language - Communications**

Long, long ago, Sapiens began to put together audio sounds to create verbal signals to communicate a wide variety of things necessary for a more complex life and society.

Sapiens have been Tribal from the very beginning of our history. No Sapien can survive without the smallest Tribe of a Mother and Father.

A Tribe is a group that lives together and communicates and has agreed upon rules of behavior.

I would imagine that living in small Tribes whose very survival depending on superior communication skills was the genesis of verbal language.

#### **Natural Languages - Universal for Sapiens**

A Natural Language is a verbal language shared by a Sapien Tribe.

There are an estimated 6500 Natural Languages in the world today shared by about seven billion (7,000 million, 7,000,000,000) living Sapiens.

Most Sapiens have one Native Natural Language they learned when very

young. The largest of these is Mandarin Chinese.  
Many Sapiens have a second Natural Language they acquire later in life to better communicate with other Sapiens.

English is the native language for about four hundred million Sapiens.

However, English is used by over one billion people worldwide.

### **Written Languages - Beginning of Civilization**

Verbal communications was limited to one on one or small group communication at a specific place in time and space.

Sapiens then invented a way to express audio languages in a symbolic format which could be communicated to much larger groups of Sapiens over space and long periods of time.

This is what eventually began to create what today we call Human Civilization.

In the beginning only a very small percentage of Sapiens could create and read written language. They became a part of the elite ruling class.

Very few Sapiens could “read and write” until the 15<sup>th</sup> Century in what we call Western Civilization.

Far Eastern Civilizations did this earlier.

### **Mathematics - a Universal Language**

Mathematics can also be considered a Universal Language used by most Sapiens.

There are many things that can be communicated in the Mathematics language that are difficult or impossible to communicate in a Natural Language.

Indeed, it is the language of Mathematics that is responsible for our modern civilization which could not have happened with just Natural Languages.

### **Printed Languages - Modern Civilizations**

The first printing press was produced in about 1450 and modern Western Civilization was launched.

Suddenly, it was orders of magnitude easier to create and distribute written documents.

Now, many more Sapiens needed to learn to read written documents and knowledge could be spread among more Sapiens exponentially.

The first printed copy of Euclid's Elements was created in the late 15<sup>th</sup> Century. This was the first Math "textbook" and was the beginning of a vast creative movement to build on Euclid and Archimedes and create new mathematics.

There would have been no Galileo or Newton or Leibniz without the printing press.

Then came Calculus, Differential Equations and modern STEM Math which is the basis of modern Science and Technology.

Then came Martin Luther and the split of Christianity. Rome lost much of its power.

[I am ignoring all that happened in the far east prior to this and focusing just on the Western Civilization.]

Natural Languages and Mathematics were pretty much the basis of modern civilization up until the mid 20<sup>th</sup> Century.

In Mathematics the Problem Solving Techniques were limited to manual algorithms that could be carried out with pencil and paper and then printed for wide distribution.

This took Sapiens through the first industrial revolution and modern science theories like Relativity and Quantum Theory.

Then we developed a new Technology which was destined to propel us into a whole new revolution. The first Electronic Computer was developed in 1946 right after WWII and the Bretton Woods agreement. The new World began!