Education is what remains once the things you'd learned have been forgotten.

by Christian Thuller

1. Introduction

It is not quite clear who this statement may be attributed to. Whether it goes back to Werner Heisenberg (1901 – 1976), a physisist, or to Edward Frederick Lindley Wood Lord Halifax (1881 – 1959), or even to the famous Albert Einstein (1879 – 1955) remains historically unproven.

Whatever, the author does not intend to focus on who the originator of this saying was, but would rather concentrate on how this quotation is perceived by the listeners.

First and foremost one must comprehend the statement. Understanding is the first step of education and therefore the basis for every other kind of mental development. Now the question arises what is necessary for a human being to be able to understand what another human being wishes to convey. The answer is quite clear and simple: LANGUAGE.

In order to communicate with other people the human being needs to have some kind of language. As the famous Austrian philosopher Ludwig Wittgenstein (1889 – 1951) put it in his treatise „The limits of my language mean the limits of my world." The first language one learns is called the mother tongue and the process one goes through as a new-born baby or child is called first-language acquisition.

It is quite remarkable at what speed new-born babies learn to talk. In the first few weeks there is not much language that can be observed, but as time goes, on babies learn to communicate with their surroundings. Just think of seven or eight-year-old children attending primary school. Their knowledge of language is quite highly developed – they can talk about many different topics (with the exception of branch specific topics like brain surgery or chemical processes for example). As long as the communication has to do with every day topics, children can easily follow the communication and contribute to it.

2. First-Language Acquisition

In the following essay the most important steps of first-language acquisition will be pointed out.

2.1 Language Input

Of central importance for language acquisition is INPUT, children need to be exposed to some kind of comprehensible language input.

A child growing up in the first two or three years requires interaction with other language-users in order to bring the „language-faculty" into operation with a particular language, such as English. (Yule, 1985: 136)

This means that being exposed to any kind of language is of central importance for the child. If children for example are brought up without hearing language they might end up not being able to speak at all.

A pharaoh, named Psammetichus, tried this kind of experiment in about 600B.C. He gave the order to bring up two infants in the presence of a mute shepherd and his sheep, so there was nobody around to speak any kind of languages. After two years, these two children were not able to speak (see Yule; 1985: 2).

The Greek historian Herodotus conveyed an anecdote about Psammetichus in the second volume of his Histories. During his travel to Egypt, Herodotus heard that Psammetichus („Psamtik") sought to discover the origin of language by conducting an experiment with two children. Allegedly he gave two newborn babies to a shepherd, with the instructions that no one should speak to them, but that the shepherd should feed and care for them while listening to determine their first words.
(http://en.wikipedia.org/wiki/Psammetichus_I as of 11 03 08)

So exposure to language is of paramount importance for language acquisition. Input and stimuli are responsible for the development of language. Thus infants literally „soak up" any kind of information in order to develop their language abilities. If there is no input at a critical period, the children miss the chance for developing language.

*In general, a **critical period** is a limited time in which an event can occur, usually to result in some kind of transformation. A „critical period" in developmental psychology and developmental biology is a time in the early stages of an organism's life during which it displays a heigh-*

tened sensitivity to certain environmental stimuli, and develops in particular ways due to experiences at this time. If the organism does not receive the appropriate stimulus during this „critical period", it may be difficult, or even impossible, to develop some functions later in life. (http://en.wikipedia.org/wiki/Critical_Period as of 12 03 08)

So, the earlier children receive comprehensible input, the better it is for their development.

2.2 Genetic Inheritance

It is quite remarkable that the language children are exposed to is not genetically inherited; for example, a Chinese baby does not automatically speak Chinese if it is brought up in a family that does not speak Chinese. An Austrian baby brought up in New Zealand by Italian-speaking parents will learn the Italian language. Simply speaking, a baby does not care about its genetic origin, but concentrates on the language it hears.

Japanese, Welsh or Samoan--children handle all languages with equal efficiency. The American linguist Noam Chomsky has suggested that children might be innately endowed with advance information on the main ways in which languages can vary. So children may have to discover whether they are dealing with an English-type language, which puts verbs in front of its objects, or a Turkish-type one which does the reverse. Once a decision is made, the child metaphorically ‚sets a switch', with multiple repercussions. If, as in English, a language has verbs before its objects, as in climb the tree, then it will also probably have prepositions before nouns as in up the tree. (http://www.fathom.com/course/10701036/session3.html as of 11 03 08)

2.3 The Acquisition Schedule

Acquiring a language starts as early as the day of one's birth. Each and every day people are exposed to one language or another. It is worth remarking that all normal children, be they Asian, European, American, African, etc., develop language skills at about the same age (see Yule; 1985: 137).

This is due to the fact that most of the children develop their abilities for sitting, standing, walking, and running at the same time. Scientists point out that the same must be true for language learning. As the infant's brain develops, so does its ability for language acquisition. In order to improve its knowledge of the world the child strives for more language input in order

to work out difficult problems presented to him or her by the environment. Learning a language is the first step of educating oneself. This step is not an easy one but it is the first one in a series on our way to EDUCATION.

2.4 The First Steps of Language Learning or Educating Ourselves

The first step of language learning occurs at an age of about 3 to 10 months. To be honest there is not a lot of conversation going on, but it can be seen that babies start to *babble.* According to Yule and other scientists, the first sounds a baby produces in order to communicate with its surrounding are *k* and *g*, the so-called velar consonants.

Furthermore, as most of us have already encountered, high vowel sounds like *i* and *u* are next.

At the age of approximately 6 months, the child already produces a number of different consonants and vowels.

This stage of language acquisition is called *babbling* and here the child produces syllables like *mu, ma, mi*.

So from producing single sounds to producing syllables it takes a child only a few months. Now first two steps in EDUCATION have been achieved.

Children learn new languages very easily, almost too easily. Most adults find foreign languages quite difficult. They must toil and struggle and put in long hours of hard work to make even small gains in their ability in a new language. But a child seems to just pick it up out of thin air. To a child, it is all play and no work. And, to make it even more frustrating for the adult learner, the results of a child's language play are superior to the results of an adult's language struggle. It does not seem fair.
(http://iteslj.org/Articles/McGlothlin-ChildLearn.html as of 11 03 08)

2.5 Caretaker Speech

In order to make it easier for our children to understand what we are saying parents all over the world use a kind of simplified language called *caretaker speech.* This caretaker speech is a simplified version of our everyday language, where grammar and syntax are reduced to a minimum in order to give infants the opportunity to perceive what we are saying. As an example I would like to mention the following sentence: *Maggie, wanna drink juice?*

This simplified version of *Margareth, do you want to have a glass of orange juice?* clearly shows that parents adopt their language to their children. For further information the author recommends taking a look at George Yule's book *The Study of Language; Chapter 15* where quite a number of realistic examples are shown.

Caretaker speech uses very limited conversational structure and grammar and repetitions occur frequently.

2.6 The One-word Stage

At the age of about 12 to 20 months a child is able to produce a great number of different sounds and utterances that are already recognizable and distinguishable. At this stage the infant already knows that by using different words he or she can refer to different kinds of things. For example *mummy, daddy, milk, cookie, sweet* are the first words a child produces, well being aware of the fact that a different word/sound/utterance refers to a different kind of subject in our world.

When children start to produce vocalisations which are recognisable as words, they often spend some time in the holophrastic stage of language development. Their utterances seem to be capable of conveying as much meaning to the listener as a complete sentence would have done. By the time that children have learnt the lexical content of the language around them, it appears that they also know how to use language for communication. (http://bowland-files.lancs.ac.uk/chimp/langac/LECTURE3/3one.htm as of 11 03 08)

This is one central aspect of education, realising at an early stage that different items need to be approached by different connotations.

2.7 The Two-word Stage

Beginning with the age of about 20 months, the child develops the ability to produce two separate words. Infants utter phrases like *wanna drink, give banana, gimme cookie* which can be perceived by the adult due to their context.

Brown (1973) produced a typology to express semantic relations in the two-word stage. He identified eight sets of relations that occurred frequently in the two-word utterances of samples of children who were learning either English, Finnish, Mexican Spanish, Samoan or Swedish:

1. *agent and action (Daddy run)*
2. *action and object (Kick ball)*
3. *agent and object (Daddy ball)*
4. *action and location (Kick garden)*
5. *entity and location (Clock mantelpiece)*
6. *possessor and possession (Mummy apple)*
7. *entity and attributive (Clock noisy)*
8. *demonstrative and entity (There clock)*

(http://bowland-files.lancs.ac.uk/chimp/langac/LECTURE7/7semant.htm as of 11 03 08)

It has to be mentioned that the child not only produces utterances but that it finds out that every utterance (hopefully) triggers some kind of feedback. According to scientist, infants at the age of 2 have a vocabulary of about 50 words.

2.8 Multi-word Utterances

At the age of 2 or 3 years, the infant starts to produce utterances that consist of more than just one or two words. These utterances are referred to as so called multi-word utterances and the particular stage at which they occur is called the telegraphic speech stage.

In the field of Psychology, Telegraphic Speech is defined as a form of communication consisting of simple two-word, noun-verb sentences that adhere to the grammatical standards of the culture's language. For example, an English-speaking child would say „Give cupcake" to express that they would like a cupcake rather than „Cupcake give". Researchers have noted that this period of language acquisition occurs some time between the ages of 18-36 months and is present not just in English-speaking cultures, but can be found world-wide (Bloom 1970).
(http://en.wikipedia.org/wiki/Telegraphic_speech as of 12 03 08)

It has to be highlighted that at this early stage infants can already differentiate between the word order of sentences, no matter what language they are using. So for example the 3 year old knows that there is a major difference when saying *Michael want milk* and *milk want Michael*. Furthermore, the

first of a series of grammatical inflections turn up and for the first time prepositions like *in, on, at* are used.

Scientists found out that content of vocabulary rapidly grows at the age of 2½. This is exactly the same time when children start running and jumping. This physical development of children supposedly goes hand in hand with the development of language abilities in the brain. The stimulus of the body has direct influence on the activity of the infant brain, where new nodes are developed, not only serving the purpose of working on the motoric processes of the body, but also on the increase of the language capabilities.

3. The Language-acquisition Process

After having taken a closer look at the different stages of language acquisition and its requirements we should now ask ourselves in what way children acquire a language and thus, for the first time, educate themselves.

Have you ever thought of how your child or your children have learned their language? Have you been sitting with them at a table describing words, grammar, syntax and semantic features? Probably not! So how are your children able to communicate with you by using language?

3.1 Trial and Error

Scientists are of the opinion that children try some kind of trial-and-error method in order to construct correct and meaningful sentences.

The child's linguistic production, then, is mostly a matter of trying out constructions and testing whether they work or not.
(Yule; 1985: 142)

Again, exposure to language is the key to success for adapting and improving linguistic capabilities. Unlike a parrot, a child does not simply imitate sentences spoken by adult; the child tries to combine different words in order to form sentences of his or her own.

3.2 Adult Correction

Adult correction describes the process of adults correcting the child's language over and over again. Strangely enough, adult correction does not seem to be a very effective way of improving a child's language.

As an example for clarification is found in Yule's book *The study of language* on page 142:

Child: My teacher holded the baby rabbits and we patted them.
Mother: Did you say the teacher held the rabbit babies?
Child: Yes.
Mother: What did you say he did?
Child: She holded the baby rabbits and we patted them.
Mother: Did you say she held them tightly?
Child: No, she holded them loosely.

This example shows that although the mother tries to make the child aware that *holded* is not the correct past tense of *held,* the child does not make use of the correction but simply re-uses the wrong form.

4. General Linguistics

As the infant develops his or her language skills and utterances are becoming more and more complicated, we have to focus on the field of linguistics.

In the following pages we will concentrate on the rapid development of language, considering various aspects of linguistics such as morphology, syntax and semantics.

4.1 Description of Terms

4.1.1 Linguistics

First of all the word linguistics has to be defined.

Linguistics is the scientific study of language. Someone who engages in this study is called a linguist.
General (or theoretical) linguistics encompasses a number of sub-fields, such as the study of language structure (grammar) and meaning (semantics). The study of grammar encompasses morphology (formation and alteration of words) and syntax (the rules that determine the way words combine into phrases and sentences). Also part of this field are phonology, the study of sound systems and abstract sound units, and phonetics, which is concerned with the actual properties of speech sounds (phones), non-speech sounds, and how they are produced and perceived.
(http://en.wikipedia.org/wiki/Linguistics as of 12 03 08)

In other words, linguistic is the overall term for describing the study of language.

4.1.2 Morphology

The study of the basic elements of language is called morphology. The term means „the study of forms“ (see Yule; 1985: 60).

Morphology *is the field of linguistics that studies the internal structure of words. (Words as units in the lexicon are the subject matter of lexicology.)… For example, English speakers recognize that the words dog, dogs, and dog-catcher are closely related.*
(http://en.wikipedia.org/wiki/Morphology_%28linguistics%29 as of 12 03 08)

4.1.3 Syntax

The word syntax describes in what way words are put together so that they form a correct sentence. The correct arrangement of words in language is described as syntax. Although there are a lot of different theories on syntax, they will not be mentioned in this article.

4.2 Advanced-language Acquisition

Now, having defined the different terms, we can again concentrate on infant language acquisition, which now, at the age of about 3, takes place at a higher level.

The child now produces utterances, or sentences, that are beyond the telegraphic speech form. The present perfect continuous (*-ing*) form is being used for the first time.

Furthermore the child uses the regular plural(-s) more often. The irregular plural on the other hand, seems to require longer.

5. Conclusion

Summing it up, we can say that acquiring a language is the first step of self-education and ,even though it may be forgotten over the course of time, language stays with us for the rest of our lives. i.e. from the cradle to the grave.