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1. Demystifying the Terminology

In this section, relevant terminology to language acquisition is going to be elucidated. Such an elucidation is necessary to make clear enough the meaning of some fundamental concepts in order to avoid any sort of confusion or ambiguity.

1.1 First Language

According to the available literature on first language, it is claimed by many scholars, including Eric Lenneberg (1968) that a first language is the language any person acquires at an early age of his/her life within the critical period. According to this definition, infants who grow up in a bilingual environment could be able to have more than one first language. The term first language is also referred to as the mother tongue, native language, arterial language, or simply L1.

The term mother language/tongue should not be interpreted to mean that it is the language for one's mother. Mother, in this context, is originated from the use of "mother" to mean "origin". According to some literature, defining a mother language/tongue requires some criteria. Some of these are:

- **Based on origin:** The language(s) one acquires first in which one has established the first long-lasting verbal contact.
- **Based on internal identification:** The language(s) one identifies with/as a speaker of.
- **Based on external identification:** The language(s) one identifies with/as a speaker by others.
- **Based on competence:** The language(s) one knows best.
- **Based on function:** The language(s) one uses the most.

What is worth noting concerning the first language is that this language is part of a person's personal, social, and cultural identity. In many ways, this language is responsible for differentiating one's linguistic competence when acting.

1.2 Second Language

Unlike the native language/L1, a second language/L2 is any language a person learns after the first language/L1. Here, one should pay attention that two processes, on one hand, language acquisition, and on the other hand, learning bear different senses and therefore could not be used interchangeably. A classification of the difference between the two concepts will be presented in 1.4 further.

According to some scholars, the defining difference between a first language/L1 and a second language/L2 is the age the person has acquired or learnt the language. For instance, Lenneberg (1968) viewed that a second language is used to mean a language consciously learnt or used by its speakers after the critical age. It is clear that these speakers never achieve the same level of fluency or comprehension in this second language as in their first language.

A second language may also be referred to as a target language. A target language is a language that is the focus or end result of certain processes:

- In pedagogy, a target language refers to any language that learners are trying to learn in addition to their native language.
- In translation, a target language is applied to the language that a source text is being translated into.
- In hard sciences, a target language is the language that a compiler, for instance a computer, translates source code into.

1.3 Foreign Language

In the available literature, it is claimed that a distinction between a second language and a foreign language should be made. The distinction is said to be of a pedagogical interpretation. Generally, a foreign language is learnt for use in the area where that language is spoken. For example, English in countries such as India, Pakistan, Bangladesh, the Scandinavian countries can be considered for many of its speakers a second language. They speak it frequently and use

it regularly. Whereas, in Algeria, this language is regarded to be a foreign language. This is seen to be so due to the lack of a number of characteristics, such as historical heritage, media, opportunities for use, similar vocabulary, and common script.

1.4 Acquisition Vs. Learning

The distinction between acquisition and learning was first made by Stephen Krashen (1982) in his Monitor Hypothesis Theory. According to him, the acquisition of a language is a natural process. On the other side, learning is conscious. In the former, the person needs to partake in a natural communicative situation. In the latter, error correction is present, as in an instructional environment. However, it is worth mentioning that not all scholars agree on this distinction.

1.5 Similarities and Differences between a First Language/L1 and a Second Language/L2

The similarities and differences between a first language/L1 and a second language/L2 could be summarised in the following:

- **Speed:** Learning a second language could be a lifelong process for many L2 learners. Despite their continuous efforts, most learners of a second language will never become fully native-like in it.
- **Stages:** Learning a second language occurs in a systematic way and through systematic stages. In acquiring an L1, these stages are also present but never appear because they overlap and a person never feels that these stages are present.
- **Success:** Success is usually evaluated in two ways, likelihood and quality. For first language acquirers, these two ways are usually present and successful. However, for second language learners, success is not obviously guaranteed.

2. The Behavioural Approach

2.1 Background

Behaviourism began its rise to become the leading approach in psychology during the first half of the twentieth century. The essence of the theories that explained the tenets of this trend turned around the role of environmental events in shaping human behaviours. Mental processes are not necessary to explain the acquisition, maintenance, and generalisation of behaviour.

The works of three psychologists, Ivan Pavlov, John B. Watson, and Burrhus F. Skinner came to shape the fundamental assumptions that explain the **conditioning** theories.

- **Ivan Pavlov (1849-1936):** a Russian physiologist known primarily for his work in classical conditioning. He developed an experiment testing the concept of the conditioned reflex. This was known as Pavlov's dog theory.
- **John B. Watson (1878-1958):** an American psychologist who codified and publicised behaviourism. He founded classical behaviourism in which he treated both animal and human behaviour as the conditioned response of an organism to environmental stimuli.
- **Burrhus F. Skinner (1904-1990):** an American psychologist and an influential exponent of behaviourism. He saw human action as dependant on consequences of previous actions. His view articulated the principle of reinforcement. By this, he introduced the concept of **Operant Conditioning**.

The works of these psychologists helped to establish a legitimate area of study. In more explicit terms, their contributions are presented in the following summary.

- Pavlov demonstrated experimentally how stimuli would be conditioned to elicit responses by being paired with other stimuli. By this, Pavlov developed the concept of **Classical Conditioning**. This concept consisted of the idea that an unconditioned stimulus (e.g., Food) produces an unconditioned response (salivation). When presented

together with a conditioned stimulus (e.g., Bell), such that salivation is eventually produced on the presentation of the conditioned stimulus, they become a conditioned response.

- Watson extended classical conditioning to concern even humans. This main contribution is that he saw behaviour in what we can see and therefore behaviour is what should be studied. According to Watson, psychology, as the behaviourist views, is a purely objective experimental branch of natural sciences. Its goal is to predict and control behaviour. Introspection forms no essential parts of its methods.
- Skinner introduced the concept of **Operant Conditioning**. In operant conditioning, the emphasis on behaviour and its consequences must respond to such a way to produce the reinforcing stimulus. The principle of operant conditioning applies to a variety of situations. To modify behaviour, one needs only to find something that is reinforcing for the organism whose behaviour one wishes to modify, wait until the desired behaviour occurs, and then immediately reinforces the mechanism.

2.2 Key concepts

a. Classical Conditioning. Watson believed that all individuals have differences in behaviour. These are due to different experiences. He thought that behaviour's conditioning model was appropriate for building the science of human behaviour. He also believed that behaviour's model could be extended to account for the diverse focus of developing behaviour and personality characteristics. He gave an example on this assumption: "Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select — doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors".

b. Operant Conditioning. Skinner believed that the behaviour which is reinforced tends to be repeated and hence strengthened; whereas, a behaviour that is not reinforced tends to die out or to extinguish. Skinner defined three types of responses or operant that can follow behaviour:

- **Neutral Operant:** Responses from the environment that neither increase nor decrease the probability of behaviour being repeated.
- **Reinforces:** Responses from the environment that increase or decrease behaviour being repeated. Reinforces can be either positive or negative.
- **Punishers:** Responses from the environment that decrease the behaviour being repeated. Punishment weakens behaviour.

c. Objective Measurement. It refers to procedures when doing experiments. It concerns how to collect the required data. Some characteristics of objective measurement are:

- **Objectivity:** It means all sources of bias should be minimised or even eliminated. The same is for personal appreciations, impressions, and subjectivity.
- **Control:** In an experiment, all variables need to be controlled in order to establish cause and effect.
- **Predictability:** An experimenter is expected to predict future behaviour from the findings of research.
- **Hypothesis Testing:** An experiment often formulates hypothesis —tentative answers to the raised questions— and seeks to confirm or disconfirm these hypotheses through testing.
- **Replication:** This refers to whether a particular method and finding can be repeated with different/same people on different occasions to see whether or not the results are similar.

2.3 Basic Assumptions of Behaviourism

- Behaviourism is primarily concerned with observable behaviour: This implies that all mental processes should be overlooked from any investigation because this approach/theory claims that internal mechanisms like thinking and intelligence cannot be objectively measured and quantified.
- People have no free will: Behaviourists believed that free will is an illusion. According to their view, humans are shaped entirely by their external environment.
- When born, humans are born with a “Tabula Rasa”. Behaviourists saw the human mind as a white sheet. It is to be filled in with language via the process of exposure to the surrounding world. Accordingly, infants acquire their native language from the exposure to the people with whom they are in contact.
- Behaviour is the result of stimulus-response: All behaviour, including language, is reduced to a simple stimulus-response association.

2.4 Methodology

Regarding the methodology adopted by investigators/experimenters, behaviourisms tended to rely on experimentation. This methodology allowed for detailed study and analysis of behaviour and usually sought to end with new behavioural laws. Examples of famous experiments that were held by behaviourists are:

- **The “Little Albert” Experiment:** It was held by Watson and Rayner (1920). This experiment consisted of conditioning a young child to fear cats.
- **The “Skinner Box” Experiment:** It was carried out by Skinner. The latter trained pigeons to press a lever to get food.
- **The “Dog” Experiment:** It was realised by Pavlov. He came to the conclusion that there is an association between an unconditioned stimulus and an unconditioned response (i.e., food → salivation).

2.5 An Evaluation of the Behavioural Approach

- Strengths:
 - Very scientific;
 - Highly applicable;
 - Emphasised objective measurement; and
 - Supported by experiment and relied on theories.
- Weaknesses:
 - Ignored the biological make-up of humans;
 - Too deterministic;
 - Over-emphasised experimentation;
 - Relied on artificial environments; and
 - Neglected the influence of the mind on behaviour.

2.6 Implications of the Behavioural Approach to our First Language Acquisition

The behavioural approach considers the first language acquisition a matter of the establishment of habits as a result of the two processes that are reinforcement and reward. According to behaviourists, the baby obtains native language habits via varied babblings which resemble the appropriate words repeated by a person or object near it. Since these babblings and mutterings are repeated, they are rewarded. Obviously, this reward reinforces further articulations of the same sort into groupings of syllables and words in a similar way.

Further, the baby goes on emitting sounds, and as it groups up and combines the sentences through generalisations and analogy (for example a baby, at an early stage of its life, often says “goed” for “went”; “doed” for “did”, and so on), which are some complicated cases, condition it to commit errors by articulating in permissible sentences in speech.

By the age of five or six, babblings and mutterings grow into socialised speech. Little by little, they are internalised as implicit speech, and thus many of their utterances become

indistinguishable from the adults.

In brief, according to behaviourism, the process of acquiring our first language is a theory of **Stimulus-Response** psychology. Through which, a **Trial-Error** process, in which acceptable utterances are reinforced by comprehension and approval, and unacceptable utterances are inhibited by the lack of reward.

2.7 Limitations of the Behavioural Approach to Language Acquisitions

While there must be some truth in the behavioural approach to our first language acquisition, there are many objections to it. Elucidation of some weaknesses of the behavioural approach are presented in what follows:

- Language is based on a set of structures and ruled, which could not be worked out simply by imitating individual utterances. The mistakes made by children reveal that they are not simply imitating but actively working out and applying rules.
- Children are often unable to repeat what an adult says, especially if the adult utterances contain a structure that the child has not yet started to use. An example could be the one elicited by the American psychologist David McNeill. The example concerns the structure that uses negating verbs:

Child: Nobody don't like me.

Mother: no, say, "Nobody likes me".

Child: Nobody don't like me.

(This answer was repeated eight times).

Mother: No. Now, listen carefully! Say, "Nobody likes me".

Child: Oh! Nobody don't likes me.

(McNeill, 1966).

- Few children receive much explicit grammatical correction. Parents are more interested in politeness and truthfulness. According to Brown, Gazden, and Bellugi (1969),

It seems to be truth value rather than well-formed syntax that chiefly governs explicit verbal reinforcement by parents - which renders mildly paradoxical the fact that the usual product of such a training schedule is an adult whose speech is highly grammatical but not notably truthful (As cited in Lowe & Graham, 1988, n.p.).

- There is evidence for a Critical Age Period (CAP) for language acquisition. This simply means that the children who have not acquired language by the age of about seven will never entirely catch up. The most famous example is that of Genie, discovered in 1970 at the age of 13. She had been severely neglected, brought up in isolation, and deprived of normal human contact. Certainly, she was disturbed and underdeveloped in many ways. During subsequent attempts to recover her, despite some success, mainly in learning vocabulary, she never became a fluent speaker. She failed to acquire the language of a child of five years old.

3. The Cognitive Approach

3.1 Background

The cognitive approach came as a reaction to behaviourism in the second half of the 20th century. In reaction to behaviourism, cognitivists regarded people not as “programmed animals” that simply respond to environmental stimuli. Rather, they viewed people as “rational” beings that acquire active participation in order to acquire language. The actions of these people are a consequence of “thinking”. Changes in behaviour are observed but as an indication of what is occurring in one’s “head”.

Therefore, cognitivism focuses on the “inner mental processes/capacities”. For cognitivists, what occurs in a person’s mind —The black Box— is necessary to understand people’s behaviours. This approach to psychology emphasises that cognition is a “faculty” for the processing of “information”, “applying knowledge”, and “changing preferences”.

3.2 Basic Concepts

Cognitivism focuses on the “mental processes/activities” of the central nervous system. Mental processes or mental activities or mental functions or mental mechanisms are terms often used interchangeably for all things individuals do with their minds. Examples of mental processes concern:

- **Perception:** It is the organisation, identification, and interpretation of sensory information in order to understand the environment.
- **Introspection:** It is the process by which one examines his/her own conscious thoughts and feelings. This process relies on the observation of one's mental state.
- **Memory:** It is the process by which information is **encoded, stored, and retrieved**.
 - **Encoding (also registration):** Receiving, processing, and combining the received information.
 - **Storage:** The creation of a permanent record of encoded information.
 - **Retrieval (also referred to as a recall or recollection):** Calling back the stored information in response to some use, for some use in a process or activity.
- **Creativity:** It is a phenomenon whereby something new is created.
- **Imagination:** It is the faculty and ability to form new images and sensations that are not perceived by sight, hearing, or other senses.
- **Idea:** It is construed as a mental representational image.
- **Belief:** It is the psychological state in which an individual holds a promise to be true.
- **Reason:** It is the capacity for consciously making sense of things, applying logic, establishing and verifying facts, and changing, or justifying practices and beliefs based on new or existing information.
- **Will/Volition:** It is the cognitive process by which an individual decides on and commits to a particular action or cause. It is defined as purposive striving and is one of

the primary human psychological functions.

- **Emotion:** It is a subjective, conscious experience characterised primarily by psychological expressions, biological reactions, and mental states. Emotion is often associated and considered reciprocally influential with mood, temperament, personality, disposition, and motivation.

3.3 Basic Assumptions of the Cognitive Approach

- Cognitivists assume that behaviour is the result of “information processing”. By describing thinking as information processing, cognitivists make a comparison between minds and computers. In other words, they are adopting a computer metaphor for the mind. Both of them have inputs, outputs, memory stores, and a limited capacity for how much information they can process at any one time.
- Central to the cognitive approach, the idea is that people actively try to make sense of their environment by imposing order and meaning on the things they encounter. In precise terms, the cognitive explanations of behaviour turn around the ways in which people organise and process information relevant to particular ways of acting.

Cognitivists explain this process in terms of “schemes” driven processing. Schemes are ways of organising knowledge and experiences of the world into generic “templates” that are used to make sense of objects, situations, and the people we encounter. In doing so, cognitivists try to build models of the information processing that goes inside people’s minds. One of the aims of cognitivists is to clearly specify all the different information processing modules in the human mind in terms of their features and in their relationships with each other.

3.4 Methodology

- Cognitivism follows behaviourism in using objective, controlled, and scientific methods to investigate human behaviour. That is they rely on the results of their investigations to make inferences about mental processes.

- One example of this is that cognitivists involve conducting case studies of people with brain damage. They compare their performance on mental tasks with that of uninjured people to understand which parts of the brain are used to process which sort of information.
- In other cases, cognitivists involve manipulating either the information to people (inputs) at the ways it (processes) and seeing what effects this has on some aspects of behaviour (outputs).

3.5 An Evaluation of the Cognitive Approach

- Cognitivism emphasises on scientific methods.
- Cognitivism addresses the shortcomings of behaviourism. It offers a much better-developed account of the internal processes that shape behaviour.
- However, it is argued that, as a criticism of cognitivism, this approach to psychology over-emphasises on the computer metaphor and neglects the influence of emotions, which computers lack, on thinking and behaviour.
- An additional criticism is that the reliance on the idealised description of information processing usually ignores the variation between people in how they think and act.

3.6 Implications of the Cognitive Approach to Language Acquisition

- Chomsky, the founder of the mentalist theory, made an attack on the idea and concepts established by B. F. Skinner's behaviourist approach.
- Chomsky's principal criticism of behaviouristic language acquisition is based on the argument that language acquisition explanation of how humans come to acquire their first language cannot account for the development and acquisition of language. This argumentation owns to the following reasons:
 - Language acquisition is not a habit structure. It is of inborn nature. It is innately developed through the language acquisition device (LAD).

- The linguistic behaviour is not composed of responses to stimuli. The stimulus-response is nonsense because a child often uses his/her mental capacities to acquire language.
- According to Chomsky, LAD is unique to humans. This capacity cannot have been acquired socially. It must be innate. In this respect, social factors have no function in acquiring on first language.
- Children often repeat the words and structures of their parents but in many cases, children's language indicates systematic departures from the language used by their parents. This implies that children produce their own language.

3.7 Limitations of the cognitive Approach to Language Acquisition

Like the behavioural approach, the cognitive approach presents some limitations. Examples of these are as follows:

- Language acquisition is of totally inborn nature nor is it just a matter of biological make-up.
- The use of imitation cannot be totally denied or eliminated. Imitation and repetition do exist in language acquisition. Of course, they are not the main factors that lead to language acquisition.