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CHILDREN'S ACQUISITION OF LINGUISTIC STRUCTURES: AN INVESTIGATION OF UNIVERSAL GRAMMAR'S PRINCIPLES AND PARAMETERS

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Abstract

The question of how children acquire language has been a central concern of Linguistics, generating debate among linguists holding different views. The study aims to explore role of Universal Grammar as proposed by Chomsky in children's first language acquisition with a focus on Principles and Parameters model. The research analyzes observable data from two children having two different L1 which are English and Urdu. The study reveals humans' inbuilt mechanism of grammar which allows construction and interpretation of expressions in their first language despite limited linguistic input. The study also shows language specific parameters set by the children.

Keywords: *Evidence, I-language, Language Acquisition Device (LAD) , Parameters, Principles, Universal Grammar (UG).*

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1.Introduction

Noam Chomsky's approach towards study of language is rightly considered to be Cognitive as he laid emphasis on studying a speaker's tacit rather than explicit knowledge of grammar of a language. Former type of knowledge is termed as Competence by Chomsky, which he contrasts with Performance, i.e., actual use of language. It is this

ability of language that allows a native speaker to generate and interpret linguistic structures in his native language. As Competence is knowledge of grammar at subconscious level, it is considered to be Internalised within brain or mind of a native speaker and came to be called as I-Language by Chomsky, while Performance being externalized, known as E-Language. As noted by Radford, A. (2004), according to Chomsky (1986 a, p.22) a grammar of language is a theory of the human I-language; and as a matter of course Universal Grammar of a language is a theory of all possible human I-languages. There are certain criteria of adequacy that UG must fulfill which include: universality, explanatory, constrained and learnability.

Universal Grammar (UG), proposed by Noam Chomsky in 1950s, is a theoretical framework in Linguistics that suggests that all natural languages of human beings have a common basic structure and set of rules. These rules are hardwired in human brain which allow language acquisition. Chomsky calls this hypothetical unit The Language Acquisition Device (LAD). UG is considered to be a component of LAD, which provides rules and principles for language acquisition. Chomsky himself defines UG as: "an intricate and highly constrained structure" (p. 148) consisting of "various subsystems of principles." These include "X-bar theory, binding theory, Case theory, theta theory, bounding theory (Dąbrowska, 2015). Other principles include Movement Principle and Locality Principle.

The LAD, being native capacity humans are born with, gets stimulated when receives linguistic input (even if it is limited) from outside environment, subsequently employing UG to breakdown the input and determine its patterns and rules. In tandem with, the LAD uses the UG to identify variables which set the parameters of the language. These parameters in turn, provide guidelines or specifications about grammatical rules and structures of the individual language. As reported by Jean Aitchison (1995), according to Chomsky, the whole model or schema is inbuilt, but is employed in conjunction with "parameters that have to be fixed by experience." In essence, the specifications a particular language has established for certain factors have to be identified and located afresh by individual child who experiences that specific language. Some of the examples of parameters are Head Parameter, Word Order, Null Subject Parameter, Wh- parameter.

Chomsky in his Theory of Language Acquisition proposed a stage wise model of language acquisition. From his perspective, infants begin to identify sounds and speech patterns at the age of 0-6 months (Pre-linguistic Stage); start to produce sounds and sound combinations that resemble words at the age of 6-9 months (Babbling stage); start using single recognizable words at the age of 9-12months (Holophrastic stage); start combining two words at the age of 12-18 months (two-word stage); start combining words to make

short simple sentences at the age of 18-24 months (Telegraphic stage); and have developed an understanding of grammatical rules and can make complex sentences at the age of 2-3 years (Syntax stage). He also shed light on the presence or absence of evidence used to set parameters which he categorizes as Positive (presence of expressions which are observable) and Negative (either absence or correction of certain structures). Thus, Chomsky spotlights intrinsic/inherent nature of language and therefore stresses on role of LAD and UG in children's acquisition of first language.

2.Related Literature

Chomsky's Theory of Principles and Parameters (1981) presented UG as having universal grammatical principles which are innate; and specific parameters which are set based on the linguistic input. This theory was proposed as a solution to "Poverty of Stimulus" which stated that linguistic input which children get is often limited and insufficient to account for the complexity of grammar they eventually master. Pinker (1994) elaborated this idea by stating that language acquisition is analogous to an organ's growth in the body. This perspective situates UG at the core of linguistic nativism, suggesting language acquisition as biologically driven phenomenon aided by UG. Several studies have offered evidence supporting UG's role in children's first language acquisition. Brown (1973) demonstrated cross linguistic uniformity in terms of sequence like cooing, babbling, one-word utterances, two-word combinations and so on in children's language acquisition. Berko (1958) investigated overgeneralization errors in children's language indicating rule-based nature and processing of language consistent with UG rather than rote mimicking. Bickerton (1984) research on creole formation shows how children exposed to unstructured linguistic input develop fully systematic grammar through the support of UG. Crain and Nakayama (1987) found that children's question formation rely on hierarchical syntactic structures rather than linear word order which supports role of UG in understanding grammatical principles. Critical Period Hypothesis (Lenneberg, 1967) also corroborates role of UG in child's language acquisition. Several studies have offered evidences to support role of UG in child's language acquisition but there are certain challenges as well. Usage based approaches (Pine, 2005), connectionist models (Elman et al, 1996), cross linguistic diversity (Evans and Levinson, 2009) and poverty of stimulus debate (Pullum and Scholz, 2002) are some of the well-known challenges. Current approaches adopt integrative perspective. Many scholars are of view that while some of the features are inborn which are universal to all languages while others vary with the language. This corresponds to Chomsky's view of principles and parameters respectively. While ample research has been conducted solely on English language, this research

focuses on investigating principles and parameters in two languages i.e., English and Urdu acquired as their first language in two different individuals.

3.Data Analysis and Discussion

In order to analyze role of Universal Grammar in Children's first language acquisition, data was collected and examined under Principles, Parameters and evidence used to set parameters of language, from two different children speaking English as L1 in sample 1(named Amber, aged 2.4 months) and Urdu as L1 in Sample 2 (named Amna, aged 2.5 months).

3.1. Sample 1

1. Child: What is it?
   WH-QU.NOM COP.PRES.SG 3SG.ACC
   Adult: What is it?
2. Child: It is a pen.
   3SG.NOM COP.PRES.SG INDEF.ART pen-PRED.NOM
   Adult: What do you do with a pen?
   Child: ….
   Adult: How does a robot walk?
   Child: ….
   Adult : How does a robot act?
3. Child: It is just like the other Dino robot.
   3SG.NOM COP.PRES.SG just-ADV like-PREP DEF.ART other-ADJ Dino-ADJ robot-OBJ
4. Child: It is mummy robot.
   3SG.NOM COP.PRES.SG mummy-PRED.NOM robot- APPOS
5. Child: He making patha.
   3SG.MASC.NOM be-PRES.AUX.SG make-PROG patha-OBJ

3.2. Sample 2

Adult: wo sunao, jo ap suna rai thi.

1. Child: nahi ata.

   know-PRES.NEG
   Don't know.
   Adult: acha, meri bakri ho na?

2. Child: nahi bakri.

   NEG goat-FEM.SG
   Not a goat
   Adult: phir kia ho?
3. Child: yahan ku khari-huyee ha?

   Here-ADV why-QU stand-PROG.FEM.SG be-AUX.PRES
   Why is she standing here?
4. Child: daikh rahi ha.

   Look-PROG be-AUX.PRES
   Is looking.
5. Child: ye peechey ho- rahi ha phir me bhi

   Peechay ho- rahi hu.
   3SG.NOM back-ADV go-PROG.FEM be-PRES then-CONJ 1SG.NOM also-ADV
   back-ADV go-PROG.FEM be-PRES.AUX
   She is going back then I'm also going back.
6. Child: Noor daikh- rahi ha

   Noor-NOM look-PROG.FEM be-AUX.PRES
   Noor is looking.
7. Child: Dolly! Ap aa -rahi-ho.

   Dolly-VOC you-NOM.2SG COME-PROG.FEM be-PRES
   Dolly! You are coming.
8. Child: mujhe nai ata.

   ISG.NOM know-PRES.NEG
   I don't know

If we look at sentence 1.1 from the perspective of word order parameter (which is SVO in English), we would analyze that the two-place predicate "is" has an overt object "what" and a subject "it", but the object "what" is not on the normal position (that would come after verb). This shows "what" has been moved in the front in order to make it a question, which presents the fact that the child has rightly set WH parameter. we see it is an interrogative sentence and its declarative sentence would be: *It is …./ something.* Converting this sentence in to question requires two movement operations. One is an **auxiliary inversion** operation by which present tense auxiliary 'is' is moved in the front. The other is a **Wh-movement** operation by which the Wh-word "what" is moved to the front of the overall sentence and positioned in front of "is". This corresponds to UG's

criterion of **Constrained** that it limits the way in which movement operations may apply. This property of UG is very useful in a way as "it minimizes the burden of grammatical learning imposed on the child" and "maximises the **learnability** of natural language grammars" called as **Minimalist Program** (Radford, 2004). As a corollary, it can be said that grammatical learning would not include principles of UG, however, it may include parametric variation. In order to explain this, we need to look at sentence 1.2 "It's a pen." The sentence follows a specific **word order parameter** i.e. SVO "It(s) is(v) a pen(O).", which is typical of English language and differs from other languages e.g. Urdu which is SOV. The sentence 1.2 also correctly sets Head-Position parameter and understands that English language has explicit Subject (conforming to parameter that English is not Null Subject language). Same is the case with sentences 1.3, 1.4 and 1.5. The sentence 1.5 differs from the rest in terms of absence of auxiliary and substitution of He" for She"; and requires analysis. As far as word order is concerned, it is rightly set as S (mummy) V(making) O(Patha). Moreover, the verb also has endings (-ing) to show action in progress (making) i.e. aspect, however, it lacks an auxiliary "is" required for participle (-ing) form of verb. It is evident that in all the examples child received positive evidence for the correct use of word order, Head-Position parameter, explicitly stated subject (not Null Subject parameter) and Wh- Parameter in sentence 1.1. In sentence 1.5 she doesn't receive direct negative evidence, which could have been in the form of correction by the adult i.e. to add Auxiliary "is" and use pronoun "she". Overall, there is absence of grammatical gender for verbs (which is called Indirect negative evidence) which might be the reason child assigns pronoun "He" to "mommy", processing with a more general or default setting where "he" is used as default pronoun. This shows child's parameter for grammatical gender has not yet been set.

Look at sample 2, it is worth noting that all the sentences child speaks mostly have only verbs, even then the sentences are grammatically correct and meaningful. E.g. 2.1 has only verb, 2.2 & 2.3 has only object, 2.4 has only verb, 2.5, 2.6, 2.7, 2.8 has SV. Though typical **word order** of Urdu is **SOV,** but it allows flexibility, especially for emphasis, rhetoric or stylistic purposes, which is seen in sample 2. Sentence 2.1 "nahi ata" (don't know), 2.2 "nahi Bakri" (not a goat), 2.3 "yahan ku khari huyee ha?" (why is standing there?) and 2.4 "daikh rai ha" (is looking) all set **Null Subject Parameter/** Pro-drop as in these sentences the child has dropped pronoun and still the sentences are grammatically correct. Moreover, look at sentence 2.3, the Wh-word "ku" (why) remains in the same place as would be occupied by a corresponding non-interrogative expression. This is a parametric variation that occurs across different languages, where some languages allow fronting of Wh- words while others don't. Unlike English, in Urdu, the Wh word does not move to the front of the sentence, but rather remains **in situ.** Another important variable is

Head-Position Parameter where Urdu differs from English. Since in English head persistently precede complement, it is a head-first language. By contrast, Urdu is **a head-last** language. Now we see, there are only two possibilities: either a language is head-first or head- last as there are universal **constraints** on the parametric variations found across languages. It can be deduced that Head-Position Parameter, Null-Subject parameter and Wh-parameter all have two choices which is not idiosyncratic property of any one language but is found across languages, and is known as **Binarity Principle**. The child has been able to set language specific parameters because of the presence of positive evidence i.e. it is obvious from conversation that there is positive evidence in terms of linguistic input she receives and there is no direct negative evidence as the adult doesn't make any corrections.

4. Conclusion

The analysis exhibits significance of theory of Universal Grammar in understanding human mind and language acquisition. The children display ability to recognize and form grammatically correct sentences. It suggests that human mind has an inbuilt language acquisition software. It also demonstrates that children are able to acquire language despite limited linguistic input. Further, it suggests all languages share a common underlying structure and set of rules, which is reflected in the universal principles of UG, while variations among languages are reflected through parameters.

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