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Verb Island as Evidence Against Universal Grammar in the Usage-Based Model

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Abstract. This paper reviews the previous literature on whether the Verb Island phenomenon challenges the Universal Grammar account and supports the Usage-Based Model, as well as the alternative approach provided by the Construction Grammar of Goldberg. This paper argues that Verb Islands reflect learning from experience rather than innate grammatical knowledge. Research on young children shows that their early verb use is limited to individual verbs and does not show broad grammatical productivity. Therefore, it fits well with usage-based explanations that link development to input frequency and gradual learning. The paper also considers how Construction Grammar accounts for early verb-specific patterns. In Construction Grammar, language learning is described as extending from the primary constructions that consist of fixed schemas, which is similar to what the Verb Islands have found in children. Therefore, compared with Universal Grammar, Construction Grammar can be used as a more effective theoretical account for explaining the mechanisms of child language acquisition.

Keywords: Child Language Acquisition, Universal Grammar, Usage-Based Model, Verb Island

1. Introduction

The debate on whether grammatical knowledge is innate or not has persisted for a long time, both in Cognitive Psychology and Psycholinguistics [1-5]. Generally, Chomsky's idea of generative linguistics posits the existence of innate grammatical knowledge [6-8]. Based on generative linguistics, Crain & Fodor noted that Wexler & Culicover proposed a theory named the Continuity Assumption, assuming that children's innate grammatical knowledge is as continuous as that of adults [2]. However, by contrast, based on Cognitive and Functional Linguistics, Tomasello argued against this assumption by naming the phenomenon the Verb Island Phenomenon: that children's early utterances are confined to concrete verb-specific constructions and are learned from previous input [4,5,9]. This review generally examines the Usage-Based Model's arguments against the existence of Universal Grammar in children, the mechanism by which children learn grammar, and the Verb Island phenomenon, using Construction Grammar as the theoretical framework.

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2. Universal Grammar

Universal Grammar is the core idea of the theories in Generative Linguistics proposed sequentially by Noam Chomsky in the 20th century. First proposed in 1965 and further developed, it mainly consists of 2 central concepts: the principle and the parameter. According to Chomsky, the set of principles is the universal properties and rules governing all human languages, which limit the range of possible grammatical options. In terms of parameters, they are the set of possible grammatical options that languages can take and are responsible for the various language representations. Connecting the theoretical concepts to child language acquisition, Chomsky claims that the whole set of principles and parameters, as Universal Grammar, is a genetic endowment exclusive to humans.

3. Poverty of stimulus

The assumption that children must possess the innate grammatical knowledge, Universal Grammar, results from the theory proposed by Chomsky, hypothesising that since the stimuli from the outside cannot cover all the utterances that the child would produce, it is reasonable for one to claim that children innately possess linguistic competence, Universal Grammar [10]. That is to say, with no need for enough input, presumably, children could acquire their languages and produce numerous novel sentences. Therefore, scholars such as Pinker, as cited in Tomasello, presume that children possess the innate grammatical knowledge, Universal Grammar, that adults do [3]. According to them, grammar acquisition is equal to the addition and fixation of parameters with the aid of Universal Grammar, and the only difference between children's and adults' language production lies in the comprehensive and extensive lexical items that adults have learnt [11].

4. Structure dependence

4.1. Grammatical productivity

Contemporary scholars started to focus on whether syntactic productivity exists in children's early utterances, since data collections from CHILDES show that 18-month-old children can produce utterances on a multiword basis [12,13]. They highlighted features of syntactic productivity in children's speech [14,15].

Features of syntactic productivity could be found in children's early multi-word utterances. Taking the discourse analysis of a 2-year and 3-4 months old child named Adam's utterances conducted by Braine, he was found to be able to identify the noun category of the arguments in accordance with the predicate-argument structure [16]. By producing utterances such as "More juice", "More milk", "There daddy", "There joe", as cited in Tomasello [3]. He followed the syntactic categories of the arguments and the predicate. The application of syntactic categories in accordance with the SVO languages, and for this test, is English, which is considered the parameter of languages [6].

4.2. Verb island phenomenon

Verb Island refers to the restriction of language productivity by syntactic rules and to the production of utterances based on concrete, item-specific verbs [4,5]. In an experiment conducted by Akhtar and Tomasello, as cited in Tomasello, researchers taught children a transitive pseudo-construction named meeking construction, and they said, "Look what Ernie is doing to Bert! It is called meeking"

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[5]. Then, children older than 3.5 years were found to be able to apply the newly learned verb to other transitive structures with other arguments, whereas children younger than that age could not. Another experiment, also involving eliciting speech, conducted by Tomasello innovated the experimental design: children were asked 25-30 questions to produce speech using the newly learned pseudo-words for both transitive and intransitive constructions [5]. Based on the study results, the average number of completed constructions in the two categories produced by children aged 2 years old is 4.38 and 4.69, respectively, compared with 16.06 and 12.75, respectively, for children aged 2.5 years old.

The Verb Island phenomenon has also been found in speakers younger than certain ages across multiple languages other than English worldwide [17]. The short review by Tomasello includes languages such as Italian and Portuguese and Hebrew. Therefore, it demonstrates that Verb Island is not an occasional exception in English but rather a commonality shared by many languages [17].

4.3. Role of input

It can be inferred that the daily linguistic input outside the experiments contributes to performance variation, as follows. The age of children does function as a variable because it concerns the amount of input children receive from the outside, as demonstrated by Tomasello's experiment [5]. As mentioned, language production performance varies with age. Additionally, the pseudo-word input training each child received was the same, with each child hearing 64 utterances of each verb during the thirty-minute session. Therefore, the significance of input could be demonstrated in the empirical studies shown.

Although the child in Braine's observation did not meet the age at which children were able to apply syntactic rules freely, he still demonstrated features of syntactic productivity [16]. However, it could be the result of adults' direct input, because this variable was not excluded, which does not exclude the language of Adam's caregiver. Therefore, it does not present a complete picture of Adam's speech without any interference, which is essentially impossible, as Adam's natural, spontaneous speech was used as the material for analysis. Therefore, it does not present a complete picture of Adam's speech without any interference, which is essentially impossible, as Adam's natural, spontaneous speech was used as the material for analysis. Therefore, since the evidence supporting the Continuity Assumption is shallow, the presupposition that children possess Universal Grammar fails.

Since input has been proven to be rather fundamental to children's linguistic performance, the claim of the Continuity Assumption, that children possess the innate linguistic knowledge about grammar, which is Universal Grammar, may fail to justify itself. If the Continuity Assumption seeks to prove pre-wired grammatical knowledge, it should show that linguistic input and age do not affect children's linguistic performance.

However, the reality is that different amounts of input do function as a variable.

4.4. Linguistic competence & performance

There is also a pair of norms according to Chomsky, named linguistic performance and competence [6]. It has been claimed that there always exists a mismatch between competence and performance. Linguistic Competence is a set of knowledge and skills embedded in the speaker's mind about the language. In contrast, linguistic performance refers to the actual speech behaviour produced by the speaker, which can be influenced by non-linguistic variables [6]. Therefore, scholars holding the Continuity Assumption suggested that children in those experiments may not have fully

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demonstrated their linguistic competence and may instead have been restricted in their behaviour. In response, Tomasello remarked that there is no proven difficulty in those experiments that is beyond children's cognitive ability for them to understand the task or a direct restriction imposed on their behaviour [17]. However, the evidence supporting the Continuity Assumption that children are productive with syntactic rules could be easily challenged by further and closer investigation.

4.5. Constructional approaches to grammar

Since the Continuity Assumption fails to apply Universal Grammar to children's language acquisition, the explanatory power of Generative Linguistics is challenged. To begin with, construction grammar defines language as the interconnection of units of different complexity, namely constructions. A single construction of language consists of a schema, which maps semantic, phonological, and pragmatic information to syntactic rules [18]. Construction Grammar has several advantages over Generative Grammar in explaining how children acquire grammar, as discussed below.

Construction Grammar suggests that children abstract schemas from the constructions in the linguistic input they receive. Connecting the idea to empirical studies, Tomasello identified two distinctive phases of children's language development: the item-based phase and the schema-based phase [5]. As the empirical studies mentioned above suggest, Children only imitate the language they hear and rarely generate sentences independently of the input at certain ages, a phenomenon known as Verb Island [4,5,17]. Apply the constructive approach to this phenomenon, the constructions that children have already acquired may be restricted to specific constructions themselves and nothing more. For example, a child named Eva in Bowerman, as cited in Tomasello, was found to be able to use the verb "want" with a series of objects, such as "want juice", "want to see" [4]. The construction that the child has abstracted for this verb could only be "WANT+X" [4].

Construction Grammar offers a better theoretical account of the features of children's syntactic productivity, as suggested by scholars holding the Continuity Assumption, namely that syntactic productivity in this stage is not genuine and appears shallow. On the other hand, the schema phase, as in the Tomasello's classical experiments, the "Meeking Construction", since older children can freely apply the novel verb "meek" in any constructions, it could hypothesize that they have already abstract the schema of both transitive construction, "X meek Y" and intransitive construction, "X meek" through the daily input [5]. Compared with the Continuity Assumption, Construction Grammar fills the gap of Universal Grammar regarding the gradual process of children's language development. Universal Grammar applies mechanical, formalistic sets of rules, which are assumed to be mature and intact from the beginning, with advantages in other areas. However, Construction Grammar can offer a more coherent and comprehensive explanation for children's language development. The explanation is compatible and consistent with the Verb Island phenomenon.

Construction Grammar may also account for the issue of linguistic input in the environment, a debate in academia. Chomsky's logical deduction that since the environment does not present children with an adequate amount of linguistic data, they can still successfully acquire the language was fundamental to the theoretical basis of the Continuity Assumption [6,7]. However, it has been challenged by various literatures. Poverty of Stimulus rests on deductive reasoning without direct empirical evidence [19,8]. Moreover, the significance of linguistic data in the experiments conducted by Tomasello mentioned above also argues that linguistic data must be present as a variable affecting children's linguistic performance [4]. However, if taking a constructive approach to the corpus of children's language. Since it has been known that children can schematise constructions from linguistic input, it is reasonable to assume that they do not simply memorise the

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input [3,20]. Therefore, it is neither necessary nor naturally realistic for children to directly receive linguistic input that they want to imitate and learn. In other words, if children can successfully abstract schemas from linguistic input, this contributes to their language acquisition. Supporting this hypothesis, Sampson found that varieties of syntactic construction are available in the input that children may receive through the analysis of the British National Corpus [20]. For example, he found that constructions such as auxiliary fronting "He is in the kitchen. ~ Is he in the kitchen?" (p 76). Similar examples include the initial adverbial clause, "if X, would you" (p 80). Therefore, through exposure to those linguistic data, children could schematize the constructions and apply them to their own utterances. However, this situation may raise concerns about infants' ability to practise abstracting constructions. Task performance is generally attributed to general cognitive abilities rather than the Universal Grammar of Continuity Assumption [21]

5. Conclusion

In conclusion, the Usage-Based Model proposed the Verb Island phenomenon through a deep and close investigation and refuted the claim that young children freely apply syntactic rules to generate sentences, as well as the existence of Universal Grammar in children. Moreover, it applies Construction Grammar as the theoretical framework to provide a better account of the mechanism by which children acquire grammar, thereby partially filling a gap left by the failure of Universal Grammar in the field. Rather than a mature, intact, and pre-wired linguistic awareness, Construction Grammar implies that children gradually schematize constructions through exposure to meaningful linguistic input and develop syntactic productivity after receiving sufficient input. It is advantageous in its compatibility with the Verb Island phenomenon and the empirical evidence. Therefore, the Usage-Based Model not only justifies itself with empirical evidence but also fills the gap in the mechanism by which children acquire grammar through the framework of Cognitive Linguistics.

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