www.bircu-journal.com/index.php/birci
Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
Budapest Institute

Communication Strategies of Individual with Down Syndrome

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Abstract

The issue on language and communication disorder of individuals with Down Syndrome becomes the focus of this study. It explores the disorder as a language phenomenon represented in movie. Where Hope Grows movie describes the character with Down Syndrome struggling in communicating with people in his workspace and independent livelihood. The result of this study shows that the utterances have dissimilarities with common people particularly in phonological terms such consonant clusters produced as a singleton, omitted word final consonant, target fricatives and affricates are produced as stops, and aspirated voiceless stops in initial position are de-aspirated. Moreover, there are also issues within the syntactical terms such simple infinitive clauses with equivalent subjects, infinitive clauses with different subjects, and quotes as full clauses. Further studies should cover more elaborative communication strategies of speakers with Down Syndrome in more impromptu and spontaneous speech contexts.

Keywords
down syndrome; communication; phonology; syntax

I. Introduction

Communication strategies can be described as a linguistic or paralinguistic technique used for overcoming obstacles of communication (Field, 2004). The type of communication strategies can be categorized into two basic types, those are verbal and non-verbal communication occurring not only to common people, but also to people with a gift such Down Syndrome (DS).

DS is known as a congenital disorder stemming from a chromosomal abnormality caused by an extra copy of all or part of chromosome 21 in all or most cell lines. The extra chromosome makes many changes and problems to the human development especially for the cognitive skill, physical features and language progress (Carr, 1995). The degree of cognitive deficit varies widely from close to normal intelligence to severe retardation, with 80% of individuals showing moderate retardation (Pueschel & Myers, 1994). People who have DS disease also need to communicate with each other in a social sense, but their ability in using language and the way they communicate is different from the common people. In this case, their interpersonal communication may become a significant issue as it belongs to one of the complicated skill to acquire (Hutagaol et al., 2020). Therefore, in their adulthood, the social relationship of the majority is limited (Carr, 2008).

The development of language in DS may differ in their pre-linguistic age (Oliver, 2012). Furthermore, Ivić (2016) elaborates the communication skills of a child with DS at the end of the first grade of Elementary School. By the age of six years, children with DS suffers from impairment in pragmatic communication (Smith et al., 2017).

In down syndrome, some difficulties occur in terms of phonological and syntactical production. The phonological processing becomes the notable impairment since childhood (Van Borsel, 1996). Their phonetic production is characterized by the consonant clusters

are produced as singleton consonants (Fiorentzi, 2016), word-final consonants are omitted (Penke, 2018), and target fricatives and affricates are produced as stops (Deri, 2018). In addition, the word-initial liquids are produced as glides and word-final liquids are produced as vowels or are omitted (Emeeshat, 2017). These are characteristics in the phonological production in childhood DS. In terms of syntactical production, Thordardottir et al. (2002) mention some characteristics of the DS utterances Variations of the phonological and syntactical production as communication strategies in adult DS speakers still need more explorative studies.

Nonetheless, the DS adults have the different way to communicate with other people, because they gain language disorder since they were born. Examining the communication of DS is necessary because communicating with DS needs different strategies. This study is also being the proof of the DS communication, because the movie also supported "behind the scene" to ensure that main character is truly DS. This research aims to identify the types of communication strategies used by the DS character in the Where Hope Grows movie. The goal is to enrich the understanding of the theoretical framework to psycholinguistic study towards the DS language disorder.

II. Research Methods

This case study investigates the communication strategies of adult DS which is acquired from the movie analysis through the psycholinguistics analysis. The main data source of this study is taken from a Down syndrome character in Where Hope Grows, an American drama film written and directed by Chris Dowling. The film was released on May 15, 2014, by Roadside Attractions. The data are words, phrases, and sentences taken from the conversation in the movie. The analysis covers classifying the data based on the phonology rules and syntactic rules strategies. Then the analysis is done by identifying the strategies in using verbal language especially in phonological and syntactical context. The last step is drawing the conclusion.

III. Results and Discussion

3.1 The Phonological Production of Adult Down Syndrome

Produce, as the Down Syndrome (DS) character in "Where Hope Grows" movie has some problem in communication and producing appropriate sentence. The data cover ten scenes in the movie involving Produce's utterances that in terms of phonological production demonstrate several features as the following.

a. Consonant Clusters are produced as a Singleton

In the scene where Produce, the DS character who is being a shopkeeper offered a female customer her assistance, he asked "Would you like to have somebody to help you shop more?" *[wʊd ju laɪk hæv sʌm.bə.di tu hep ju ʃɒp mɔ?]* He says the word "help" as "hep" (datum 2). Referring to the phonological process, the case which is happened to Produce includes as cluster reduction. As Van Borsel mentioned (1996), this phase happens when a consonant cluster reduced into a single consonant (Stoel-Gammon, 2018). In this context, the cluster reduction does not interfere meaning as the listener can get the message of the utterance,

In another conversation, Produce asks a male customer "Did you drink that whole bottle?" *[dɪd jʊ drɪk ðæt hoʊl ba.tl̩?]* The word drink should be transcribed as *drɪŋk* but based on what Produce says, the *drɪk* misses the *ŋ* (datum 9). Similar case also occurs in

his sentence “Well, to me, I think you're great” *[wel, tu mɪ, aɪ θɪŋk jʊr greɪt]* (datum 10). The *θɪk* also loses the *ŋ*, meaning a consonant cluster reduced into a single consonant.

The way the consonant cluster becomes reduced is related to the proximity of consonant cluster. In children, such a reduction may occur in the process of language acquisition particularly in the context of bilingual phonological acquisition (Babatsouli and Sotiropoulos, 2018) such as those in Chilean preschoolers (Vergara et al., 2020). In addition, reducing consonant cluster is also found in the spontaneous speech of Dutch children with cochlear implant (Faels and Gills, 2017). However, when the reduction becomes permanent until adulthood, the consonant cluster reduction becomes a feature of phonological error that in this case characterizing the speech of the DS individual observed in this study

b. Word Final Consonants are Omitted

In the context of a long conversation between a customer, Mr. Campbell and Produce showed another feature of phonological production in the sentence “I'm doing good. Even when I'm doing bad, I'm doing good.” *[aɪm du.ɪŋ gʊd. i.v ə n wen aɪm du.ɪŋ bæd, aɪm du.ɪŋ gʊ:]* (datum 4). The first word of good (gʊd) happens with full pronunciation, but the second good appears as *gʊ:* , the speaker omits the consonant of word-final.

Another case of omitting final consonant also occurred in the utterance “I've always wanted to play baseball” *[aɪəv a:lweɪz wan.ɪd tu pleɪ beɪs ba:]* The word baseball should be transcribed as *beɪs ba:l* but Produce uttered as *beɪs ba:* (datum 5). In the phonological terms, this case includes as the omission of word-final consonants.

The final consonant omission can happen in second language for instance in Vietnamese learning English (Nguyen, 2019). However, in this study the omission occurs in English as the first language. The omission is also linked with the word length as observed in the utterances of children below six years speaking French (Kehoe, 2020).

c. Target Fricatives and Affricates are produced as Stops

In a dialogue conversing about baseball with Mr. Campbell, Produce asked “*Wow! Will you show me how?” [Wow! wɪl ju: doʊ mɪ haʊ?]* The word show should be pronounced as ʃoʊ (commonly used in American English) or ʃəʊ (commonly used in British) while in the cases of Produce, it is mentioned as *doʊ* (datum 6). It shows that target fricatives are produced as stops.

This phonplogical production is also similar to those uttered by bilingual children with cochlear implant (Li et al., 2017; Grandon and Vilain, 2020) and Korean children with phonological disorder (Kim et al., 2020). In the process of phonological production, fricatives and affricates belong to the last speech sound to emerge. Accordingly, to produce it correctly with a good precision is not an easy task, especially for those suffering from DS.

d. Aspirated Voiceless Stops in Initial Position are De-Aspirated

When Produce tried to explain something to his customer, he stated “A tomato is a fruit” *[ə dəmeɪ.t̚oʊ ɪz ə frut]* (datum 1). The word “tomato” that should sound as an aspirated voiceless stop because the “T” position is as initial or as the beginning of the word, nonetheless Produce says it de-aspirated and it sounds “D” likely than “T”. This kind of sound replacement is usually found in the phonological production of children aged 3-4 (Tarigan, 2019).

Similar case also happened when Produce said “Pick up that melon” *[bɪk ʌp ðæt mel.ən]* (datum 4). The way how Produce says pick which it should be pronounced as

aspirated voiceless stops because “p” is placed in an initial position, is bık. It makes aspirated voiceless stops turn into de-aspirated.

Similar difficulty is also found in children with cochlear implant acquiring Mandarin voiceless stops (Yu and Xia, 2019). Such a phonation difference of voiceless stops is also marked in those suffering from dysarthria of speech (Kim and Kim, 2019). It occurs not only in the context of Korean language but also in the utterance produce by Spanish speakers with articulation disorder

3.2 The Syntactical Production of Adult Down Syndrome

As shown in the movie, the utterances of the character with DS demonstrated some characteristics of syntactical weakness. Compared with vocabulary, the syntax is a particular weakness for individuals with Down syndrome. It is in line with Iverson et al. (2003) that their acquisition is delayed as in childhood they have been transitioning from 1- to 2-word speech (Iverson et al., 2003). The syntax is a particular weakness for individuals with DS with expressive syntax being more delayed than receptive (Roberts et al., 2007). This fact explains that individuals with DS continue to produce shorter and less complex utterances than typical speakers. The syntactical production in their speech covers the following categories.

a. Simple Infinitive Clauses with Equivalent Subjects

In the conversation where Produce wanted to be friendly by stating “Would you like (to) have somebody to help you shop more?” (datum 2). In this complete and complex sentence, he loses. Therefore, this case constructs double verb in a sentence, those are like and have. Based on the syntactical rule it is included as simple infinitive clauses with equivalent subjects.

The use of simple infinitive clauses with equivalent subject is in line with the findings of Thordardottir et al. (2002). The clauses are marked by the infinitive particle to, in which the subject is the same as that of the main clause. It is understandable that in dealing with complex syntactical patter DS would find it difficult, therefore they can omit some parts to make it easier to express. The more complex the pattern, the more apparent the deviant syntactical production they perform (Andreou and Chartomatsidou, 2020).

b. Infinitive Clauses with Different Subjects

The sentence that is said by Produce “Do you want (to come) to church with me? Included clauses with different subjects based on the syntactical rules. Since he misses theto come and the sentence becomes “Do you want to church with me?” (datum 8).

Infinitive clauses with different subjects in the findings of Thordardottir et al. (2002) appeared when the clauses are marked by the infinitive particle to, in which the subject is different from that of the main clause. The difficulties are more apparent in both the comprehension and production of relative clause since childhood as reported by Christodoulou and Grohmann (2018). Their finding in the context of Greek speech shows similar area of grammatical difficulties with English as observed in this study.

c. Quotes as Full Clauses

Produce expressed “My mama told me... it (has) all the whistles and all the bells” (datum 7). It includes in quotes as full clauses through the syntactical rules. However, by knowing what Produce has said, he omits the “has,” it makes that sentence loses the proper meaning as a quote as full clauses.

Quotes as full clauses containing both direct and indirect quotes that consist of a full clause also become the findings of Thordardottir et al. (2002). The examples are: "And he said 'What are you doing?'"; "And Josh says he's too heavy"; "And my mom said 'wait.'"

In the data, there are some differences to the findings of Thordardottir et al. (2002). There are no utterances belong to conjoined sentences, containing, minimally a subject and a verb within a single utterance. Full propositional complements are not found where the complete clauses occupy a complement position in a sentence. Direct and indirect quotes were not included in this category, for example "I'm pretending these are from this year." The less variation of syntactic difficulties as the finding of this study is line with Weinzapfel (2014). In other words, in adult individual with DS, syntax development continues throughout the adult years and is possible even in late adulthood.

3.3 The Communication Strategies of Adult Down Syndrome

Communication is simply the act of transferring information from one place to another. However, in the communication of adult with DS, it becomes a lot more complex. The process of transmitting information and common understanding from one person to another requires exchanging of information, otherwise there is no communication when missing basic linguistic markers (Anderson and Goolishian, 1988). For this purpose, the communication includes both verbal and non-verbal communication. In individual with DS, successful communication relying on verbal device is not enough. Therefore, Produce as the DS character in this research, mostly uses the gestures and inserts the expressive language in every sentence he says

The complexities of verbal language for adult DS are related with the vast repertory of skills in interpersonal processing, listening, observing, speaking, questioning, analyzing, gestures, and evaluating enables collaboration and cooperation (Finestack and Abbeduto, 2010). This process requires the divergence of comprehension and production skills (Chapman and Hesketh, 2001). In particular, language production skills do not stop with the onset of adolescence or plateau with simple sentence structure, as studies with small numbers have suggested (Fowler et al., 1994). The view that language development plateaued arose both because of the wide individual differences in adolescents' rate of progress in expressive language, and because language samples did not always include the narrative tasks that reveal higher levels of complex sentence construction (Chapman and Hesketh, 2001).

IV. Conclusion

Produce, as the Down Syndrome (DS) character in "Where Hope Grows" movie has some problem in communication and producing appropriate sentence. From the data that are taken from Produce's utterances in Where Hope Grows movie, the findings demonstrate some strategies of communication in adult DS. However, as Produce is a DS, he mostly uses the gestures to express his language thoroughly. For verbal communication the findings are in terms of phonology and syntax.

The phonological production covers (a) consonant clusters are produced as singleton; (b) word final consonants are omitted; (c) target fricatives and affricates are produced as stops; and (d) aspirated voiceless stops in initial position are deaspirated. In terms of syntactical production, it includes (a) simple infinitive clauses with equivalent subjects; (b) infinitive clauses with different subjects; and (c) quotes as full clauses.

As the implication of the finding, further studies need to explore the real conversation or dialogue of the DS impromptu or spontaneously. More analysis is needed to examine more phonological cases in DS to see the context supporting the occurrence of the word-initial liquids are produced as glides and word-final liquids are produced as vowels or are omitted; and word-final voiced obstruent are devoiced. Meanwhile in syntactical terms it needs supporting finding in the category of conjoined sentences, full propositional complements, simple non-infinitive wh- clauses, sentences with relative clauses, sentences with gerund clauses, unmarked infinitive clauses and wh- infinitive clauses

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