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Short Communication

Effect of processing instructions on discourse abilities

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Abstract

Discourse refers to the discussions, talk, conversation or communication on a particular thought, idea or topic. Discourse marks the way of eliciting the verbal output into the most naturalistic way which helps to provide the feedback about the generalized use of the language and its forms. The discourse can be elicited in two ways that includes, firstly, direct discourse that might be over a new or common topic/situation and secondly, it can be cued that is an indirect discourse involving prior set of few processing instructions or cues that might aid the person to perform the discourse. The study intended to investigate if the processing instructions impactedthe verbal output. 10 individuals including same number of males and females between 18 to 25 years of age were considered for the study. 2 topics were chosen on random basis that included films and tourist places. The instructions were given in Kannada. The participant had to spontaneously speak over it without any time delay. Once the individuals stopped, the 11 processing instructions were given for each of the topic. The verbal output was measured in terms of the total number of sentences produced within the verbal output, the number of words in the longest sentence produced, Mean Length of Utterance (MLU), clause-unit for the spontaneous output and the output measured after providing processing instructions. Wilcoxon's signed rank test was used. The results showed the importance of processing instructions on enhancing the verbal output.

Keywords: Discourse, processing instructions, mean length of utterance, clause unit.

Introduction

Discourse refers to the discussions, talk, conversation or communication on a particular thought, idea or topic. It can also refer to the verbal output in turn of a topic being given. It is meant to provide a statement/view/review/comment (grossly, a response) with purpose of assigning meaning, establishing relationship (between two objects or situations), probing reason behind the occurrence etc[1]. Moreover, the purpose behind discourse procedure is to analyze the language structure naturally in terms of the above mentioned situations[2]. Discourse marks the way of eliciting the verbal output into the most naturalistic way which helps to provide the feedback about the generalized use of the language and its forms (semantics, syntax).

Discourse apparently measures quantitative aspects but it measures communicative competency. Some proponents believe that the sentences are the basic units of quantitative measurements[3]. While few other researchers view sentence as an interface between the content and the utterances produced by the speaker[4]. The number of sentences or the quantum of verbal output is directly proportional to the conceptual knowledge. However there may be individual discrepancy in terms of the verbal output[5].

The conceptual knowledge is reflected through the 'global coherence' Local coherence' is the other term which refers to relationship shared by utterances, sentences and propositions. To measure the verbal competence, both global coherence and local coherence are considered as yardsticks. Global coherence in other terms is called as the theme of a particular topic. Some researchers call it as idea upshot while few others call it as the conceptual gist. The global coherence is drawn from the sequences of text by the macro rules. The macro rules govern the deletion, selecting and generalization. Local coherence on the other hand enables in establishing meaning connections between successive sentences or phrases in a text or between constituents of sentence Beaugrande, 1991[3]. However the operation of the local coherence is dependent on global coherence to surmount discontinuities. The relationship between the local and global strategies is assumed to operate on "bottom-up" mechanisms and "top-mechanisms.

Discourse abilities in children will be less when compared with adults. This can be due to the inadequate experience regarding the topic, waiting for the confirmation from adults to check whether the verbal output is in accordance with the topic given or not. It can also vary in accordance with the semantics, syntactic structure and coherence with respect to the topic[6]. Children use more simple structures and their mean length of utterance will also be smaller when compared with adults. Children's abilities to speak also vary with limited attention span and distractions from environment[7]. As children grow, their social skills, cognitive skills and linguistic skills improve, and hence the discourse ability also improves. Children's

discourse ability can be improved if the child is trained with respect to the topic.

The verbal output on discourse can be elicited in two ways that includes, firstly, direct discourse that might be over a new or common topic/situation (might include any futuristic views or topic like hospital). Narration and storytelling canbe the way by which direct discourse can be elicited[8]. Narration can be defined as an act of recital of events or putting forth of views or commenting on the topic given[9]. Storytelling can be a type of narration which will be based on a moral value. Secondly, discourse can be cued that is an indirect discourse involving prior set of few processing instructions or cues that might aid theperson to perform the discourse (for example: sub topics about a main topic such as hospital – facilities, environment etc). Picture description is a type of indirect discourse where the particpant have to describe the given picture in their own words.

Processing instructions is a method of teaching or cueing a person by providing him/her few questions/sub-topics/sub-headings/minutes that are related to the topic which will ease their ability to process and will aid them to focus on the target structure response[10]. Moreover, by providing the processing the instructions for such discourse will help the person to elaborate on the topic but at the same time to maintain the topic and do not deviate from it. The topics chosen for discourse in this study is Films and Tourist places and some of the processing instructions used for these topics are favorite actor, favorite actress, favorite dialogue (Films) and favorite tourist place, lifestyle in the places visited, language used in the place (Tourist places). Thus, it also puts fewer loads on processing in terms of the syntactic rules to well maintain and to provide appropriate semantic coherence with the topic/thought/idea given.

It is clear through studies that the processing instructions could facilitate the verbal output on discourse. However, the requirement of processing instructions may be individual specific.The analysis of the output on a group of individuals would tell researchers on how many of them would require processing instructions to come with a desirable verbal output. Processing instructions is usually given to older individuals who may not be able to spontaneously give verbal output. The effect of processing instructions has not been studied in young neuro-typical population, and the study would address the research question on whether the processing instruction would facilitate the verbal output of these individuals or not.

Aim: To investigate the effect of processing instructions on verbal output.

Objectives: To compare spontaneous verbal output and the output obtained after providing processing instructions.

Methodology

Participants: 10 individuals including same number of males and females between 18 to 25 years of age were considered for the study. The participants chosen for this study had their First language as Kannada (which is their mother tongue) and they were selected based on simple random sampling.

Stimulus: Initially a pilot study was conducted before conducting the present study. In the pilot study, 10 topics were used. 5 individuals who were overt and possessed good expression abilities served as participants. They were asked to speak about the topics. Based on their verbal output processing instructions were prepared. The processing instructions were selected only when they were used by at least 3 individuals out of the 5 individuals.

Procedure: Out of the total 10 topics chosen from the pilot study, 2 topics were chosen for the main study on random basis, the topics included FILMS and TOURIST PLACES. Further, the testing commenced and the subjects (apart from the participants considered for the pilot study) were supposed to speak on the topics mentioned above. Once they finished their spontaneous narration, processing instructions were given.

The processing instructions were given in Kannada. 11 processing instructions were given for each of the topic in the form of written form. The participants were required to read all the eleven instructionsand speak about the topic again. The verbal output was measured in regard to the total number of sentences produced within the verbal output, the number of words in the longest sentence produced, *Mean Length of Utterance (MLU),* clause-unit. In addition to these parameters, qualitative analysis was carried out for coherence and sequencing.

Results and discussion

The output obtained on spontaneous discourse (SD) and discourse obtained after providing processinginstructions (PID) on the two topics was measured. The number of sentences on SD was 9 sentences (in the range of 7-12), longest sentence for SD had 14 words (in the range of 8 to 20 words), the mean length of utterance was 7-8 words and the number of clauses (clause unit) was 4. Following the analysis done after giving the processing instructions the number of sentences on PID were 14 sentences (in range of 8-22), longest sentence for PID had 16 words (in the range of 9 to 26 words), the mean length of utterance was 8-9 words and the number of clauses (clause unit) was 5-6. Moreover, the qualitative rating for PID was good and comparatively better than SD in terms of coherence and sequencing.

In order to verify if there was any significant difference between SD and PID, Wilcoxon's signed rank test was used. The Z scores ranged from 5.66 to 7.98 and the corresponding p values ($p<0.05$) showed significant difference for number of sentences, mean length of utterance, and clause-unit. In addition to this, qualitative analysis was carried out. It was found out that the sequencing was fair for SD and relatively better for PID. Local and global coherence was better for PID compared to SD.

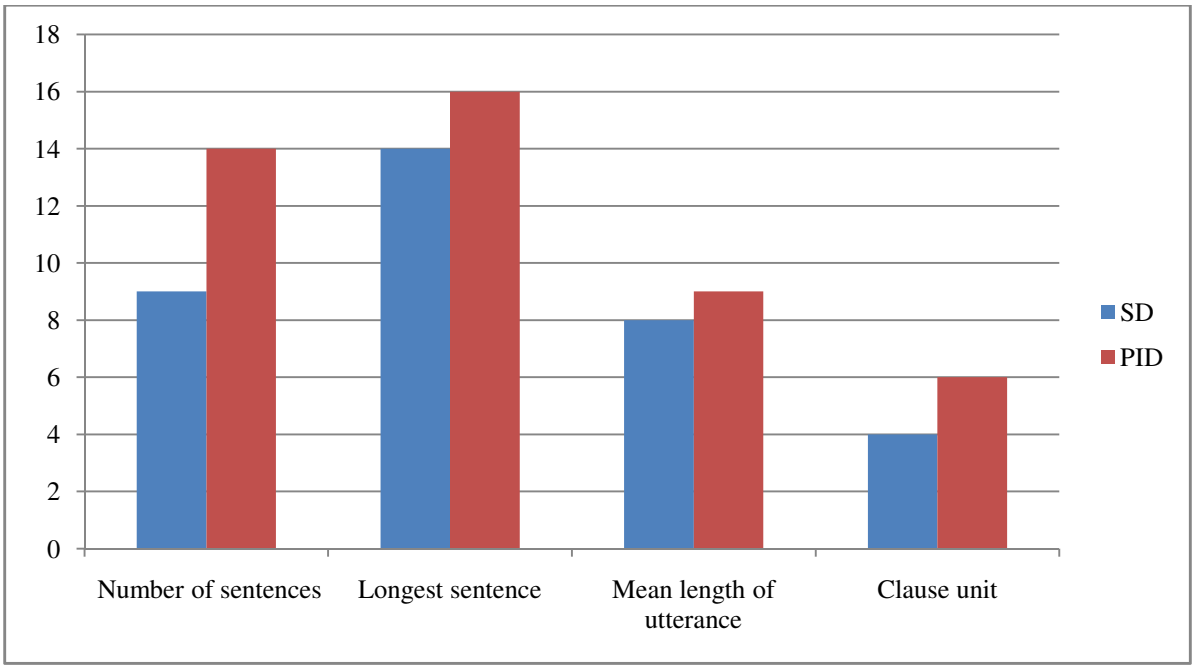

Figure-1: Comparing the verbal output on discourse with and without processing instructions.

Young neuro typical adults in the age range of 18-25 years were considered as participants. At the formulation of research question, the role of processing instruction on discourse ability of these individuals was speculated. It was assumed that participants would not require any processing instructions, however during the testing phase, it was noticed that the individuals would finish narrating in about 40-45 seconds. Furnishing processing instructions facilitated their output and this was reflected by considering the total number of sentences in each narrative, words in the longest sentence, mean length of utterance, clause-unit. All these objective parameters showed how the processing instructions facilitated the verbal output. All the individuals did not utilize all the 11 processing instructions given to them, however the processing instructions gave a direction to discourse and the quantum of verbal output improved.

The strength of this study can be quoted in terms of the number of parameters taken for assessing the verbal output and comparing the spontaneous discourse and discourse after giving processing instructions and also the comparison between the young neuro typical adults. Moreover, there is least scope of any bias, thus providing the study a transparent background.

The limitations for the study include the sample size taken for the study. Also, the role of the internal factors might affect the responses quality or even affect the process (lack of attention, interest). The sample size would have been more so that the generalization would have been better.

Implications withdrawn from the study can aid in understanding the syntactic abilities of a person. Lastly, the future directions include conducting the experiment with a large sample size which would help in generalizing the data to the population, the language in which the testing was administered can be varied according to the language acquisition i.e., either in first language, second language etc which might help us in understanding the influence on discourse abilities by the order in which the language was acquired and also administering the study in different aged population to check the discourse abilities and the need of processing instructions to improve their discourse. Similar study can also be replicated for the clinical population.

Conclusion

Study was done to measure the discourse abilities in young neuro typical adults with and without the processing instructions. A total of 10 individuals were considered. The participants were asked to speak about films and tourist places. Once the individual stopped narrating about a topic, processing instructions were given. 11 such processing instructions were provided. The output was measured in terms of number of sentences, mean length of utterance, and clause-unit for the spontaneous discourse output (SD) and output obtained after providing processing instructions. The Z scores obtained on comparison ranged from 5.66 to 7.98 and the corresponding p values were significant for 3 out of the 4 objective parameters considered. The results showed the importance of processing instructions on enhancing the verbal output.

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