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Consolidation of Concepts in the Visually Challenged and the Sighted Individuals with Special Reference to Onomatopoeic Words

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Abstract

Concept formation is fundamental to human cognition as we understand object, people and events through concepts. It turns out that many properties of concepts are found in word meaning and use, suggesting that meanings are psychologically represented through the conceptual system. How words are interpreted by other speakers play an important role in language acquisition and communication. Language acquisition and interpretation of utterances also involve coordination of visual stimuli such as gesture and facial expressions. In this paper we have explored how meanings are assigned to onomatopoeic words by the adolescents having different degrees of visual impairment.

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1. Introduction

“Concepts are the glue that holds our mental world together”¹. Concepts tie our past experiences to our present interactions with the world and the concepts themselves are connected to our larger knowledge structures. Earlier it was thought that infants and young children were lacking in true conceptual abilities but later research found basic conceptual abilities in few months old infants and also preschool children having sophisticated conceptual ability though their conceptual content is different from the adults. Since we understand object, people and events through

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concepts, our word and sentence meaning must have some conceptual representations. It turns out that many properties of concepts are found in word meaning and use, suggesting that meanings are psychologically represented through the conceptual system¹.

Language processing involves a variety of cognitive systems – viz. attention, working memory, auditory discrimination, morphosyntactic system and semantic and conceptual systems. In addition there is a need to coordinate visual stimuli such as gesture and facial expressions into the interpretation of an utterance². How words are interpreted by other speakers play an important role in language acquisition and communication. Undoubtedly children learn many words by hearing from others, but not just the auditory stimuli that gives information about a particular concept but visual stimuli and facial expressions of the speakers apart from the physical shape, colour etc. of the referent also contribute in concept formation. The visually challenged children certainly lack these visual inputs but they communicate normally with their sighted counterparts. So we like to find out how without any visual stimuli words are assigned meaning to form a particular concept. For this study we have taken 45 onomatopoeic and reduplicated words selected at random. Earlier research on the spoken language of the visually challenged reveals that visually challenged adolescents use adjectives less frequently than their sighted counterparts and their use of adjective is also very limited³. Adjectives modify nouns giving its exact interpretation in a specific context. Onomatopoeic and reduplicated words are often used as adjectives in order to interpret concepts in a particular situation. ‘There is also general agreement that in the standard use of the word “onomatopoeia” it refers to the relation between the sound of a word and something else’⁴. We can consider the sound of words as the nexus of acoustic properties which constitutes them as object of consciousness for a typical speaker of a language. In onomatopoeia it is the sound as related to something that constitutes its essential nature. Onomatopoeic and reduplicated words contain the features of the concept itself; i.e. the adjective itself expresses the nature of the noun or a particular concept. Moreover, these words contain high imagery and need not be learnt explicitly; any native speaker or someone who has native like competence uses these words frequently. Also, every language has this kind of words which express more or less the similar meaning across the languages. It is also found that in order to acquire concepts all the five sensory modalities, including vision, are used by the visually challenged adolescents though visual modality is used less than their sighted counterparts⁵. In this paper we like to explore the conceptual content used by the groups of adolescents having different degrees of visual impairment. We have taken onomatopoeic and reduplicated words pertaining to visual, auditory, tactual, olfactory and gustatory modalities and also words expressing emotion and manner which are not modality specific.

2. Procedure

For this study 50 visually challenged adolescents are selected from two Kolkata based blind schools of which one is a boys’ school and the other is coeducational. Both are residential and the students mostly come from BPL families. Moreover, the subjects do not have any other physical or mental disability other than blindness. To compare the data with the normally sighted subjects 48 socio-economically and educationally matched normally sighted healthy subjects are also selected from three Kolkata based schools; two of which are boys’ and one girls’ school. However, normal schools are not residential. All the subjects are students of classes VII, VIII, IX and X. The distribution of the population is given in table 1 and 2.

Table 1: Age

Visual status	Mean age	No of subjects	Std. Deviation
Congenital Total Blind (CTB)	17.36	14	3.104
Congenital Low Visioned (CLV)	16.60	25	2.327
Adventitious Total Blind (ATB)	17.00	5	1.414
Adventitious Low Visioned (ALV)	16.17	6	1.169
Normally Sighted (NS)	13.69	48	1.323
Total	15.28	98	2.482

Table 2: Gender

Visual status	Male	Female	Total
Congenital Total Blind (CTB)	11	3	14
Congenital Low Visioned (CLV)	20	5	25
Adventitious Total Blind (ATB)	4	1	5
Adventitious Low Visioned (ALV)	6	0	6
Normally Sighted (NS)	42	6	48
Total	83	15	98

A set of 45 Bangla onomatopoeic and reduplicated words are selected at random. First each individual was asked whether these 45 words are known to them or not. Then we asked them orally to tell the meaning of the words – not the dictionary meaning but the sense in which the words are used by them. Depending on their first response the items were classified into three groups, viz. most responded items (which are responded by more than 66.67% of the subjects), moderately responded items (which are responded by more than 33.34% but less than 66.66% of the subjects) and least responded items (which are responded by less than 33.33% of the subjects). The number of response for each item determines its difficulty level – either they are very difficult, or they are moderately difficult or they are least difficult or very easy. The difficulty level indicates the frequency of its use in natural language and the conceptual complexity in it. The least difficult items are used most frequently in natural language and they are relatively easy to conceptualize. The responses were classified according to the nature of the response they gave. We have classified the responses into five categories, viz. i) no response (1), ii) response similar to the dictionary definition (2), iii) response partially similar to the dictionary definition (3), iv) response by using compatible words and frozen phrases only (4) and v) miscellaneous responses (5). Miscellaneous responses are those which express senses different from the senses given in the dictionary. These include responses which express senses different from that given in the dictionary but are used frequently and widely acceptable by the native speakers of Bangla or in a novel sense which is used by that speaker exclusively. Responses similar or partially similar to dictionary definition and responses by using compatible words and phrases indicate a more tutored concept formation which is stereotyped. On the other hand, miscellaneous responses indicate more creative concept formation. For the dictionary definition we have used ‘Sangsad Bangla Abhidhan’ published by Sahitya Sangsad. Mean response pattern was compared for normally sighted (NS), congenital total blind (CTB) and congenital low-visioned (CLV) for three types of words separately. Adventitious total blind (ATB) and adventitious low-visioned (ALV) are not taken into consideration as the impact of visual impairment is not very significant on their language acquisition and also the number of respondents is very less for these two groups compared to the other groups.

All the statistical works are done using SPSS software (version-19). Charts and graphs are done in Microsoft Excel 2010.

3. Results and discussions

Fig-1 shows the response pattern for the least difficult words. The most respondent items are those which are responded by more than 66.67% of the respondents. These items can be called easy items as these items are recognized by a higher percentage of subjects. Here, the percentage of no response (1) is highest for the congenital total blind (CTB) group and lowest for the congenital low-visioned (CLV) group. Congenital total blind (CTB) group mostly responded by using dictionary definition (2) and the number of miscellaneous response (5) is also least for this group. This indicates stereotypic concept formation by them. Miscellaneous responses (5) indicate varied conceptual knowledge which is very limited for this group. On the other hand, miscellaneous responses (5) are highest for the normally sighted (NS) group which indicates a varied conceptual knowledge and so also more creativity in them. Congenital low-visioned CLV) group has lowest number of no response (1) but they also responded mostly by using dictionary definition (2), i.e. their concept formation is also stereotypic. In fact, the two visually challenged groups responded mostly by using dictionary definition (2), i.e. their knowledge for these concepts are very bounded in nature.

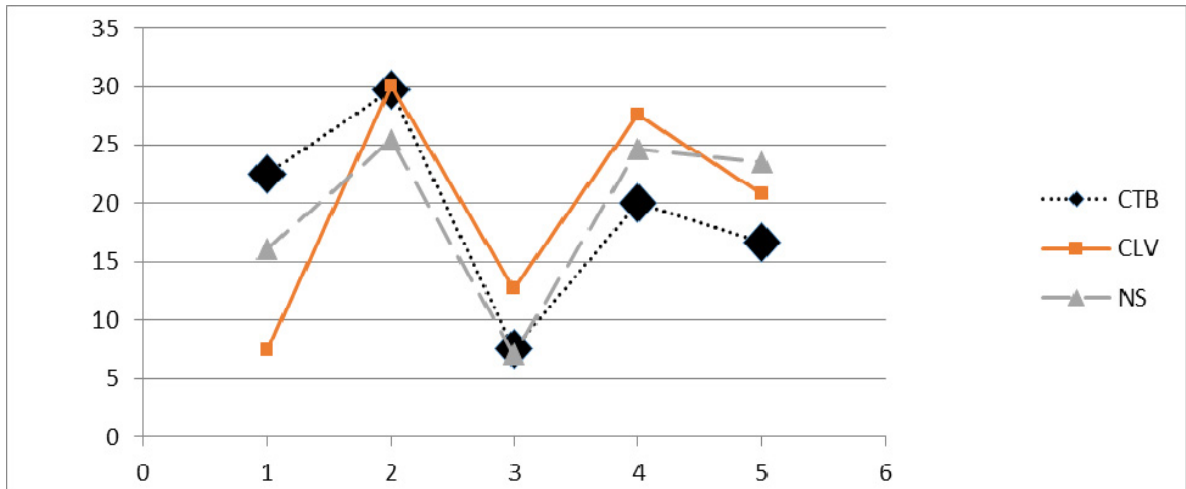


Fig-1: Response pattern for the least difficult words. Index for x-axis points are: No response (1), Similar to dictionary definition (2), Partially similar to dictionary definition (3), Use of appropriate words or phrases (4), Miscellaneous response (5).

Fig-2 shows the response pattern for the moderately difficult words.

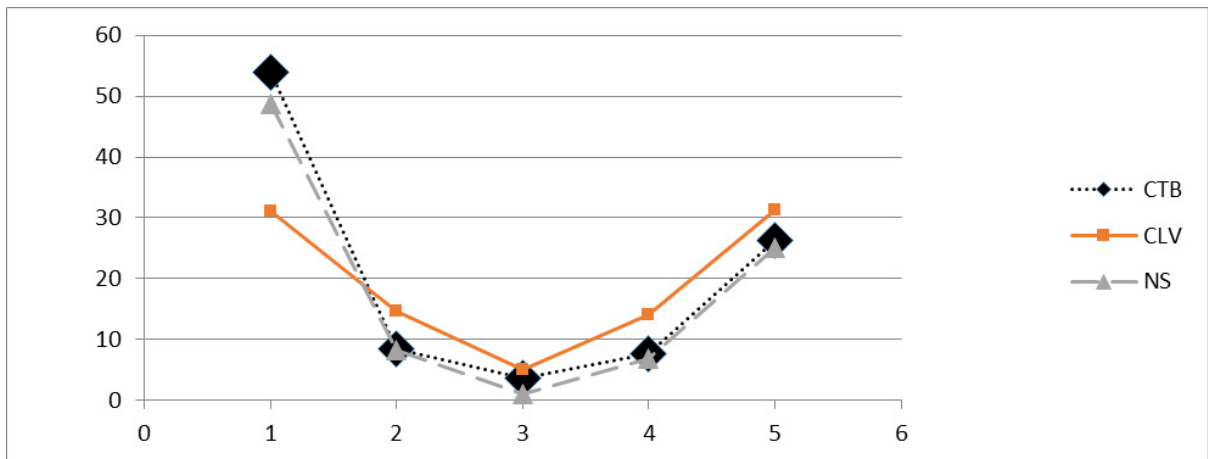


Fig-2: Response pattern for the moderately difficult words.

Index for x-axis points are: No response (1), Similar to dictionary definition (2), Partially similar to dictionary definition (3), Use of appropriate words or phrases (4), Miscellaneous response (5)

Moderately responded items are those which are responded by only 33.34% to 66.66% subjects. As the number of response is lower these items can also be classified as moderately difficult words. For these words using of dictionary definition (2) is very low, less than 14.76% only. The percentages of miscellaneous response (5) are quite high for these items, between 25% to 31.24%, which indicate creativity and more open conceptual knowledge. Here, congenital low-visioned (CLV) group has lowest number of no response (1) and highest number of miscellaneous response (5) which is 31% and 31.24% respectively.

Fig-3 shows the response pattern for the most difficult words.

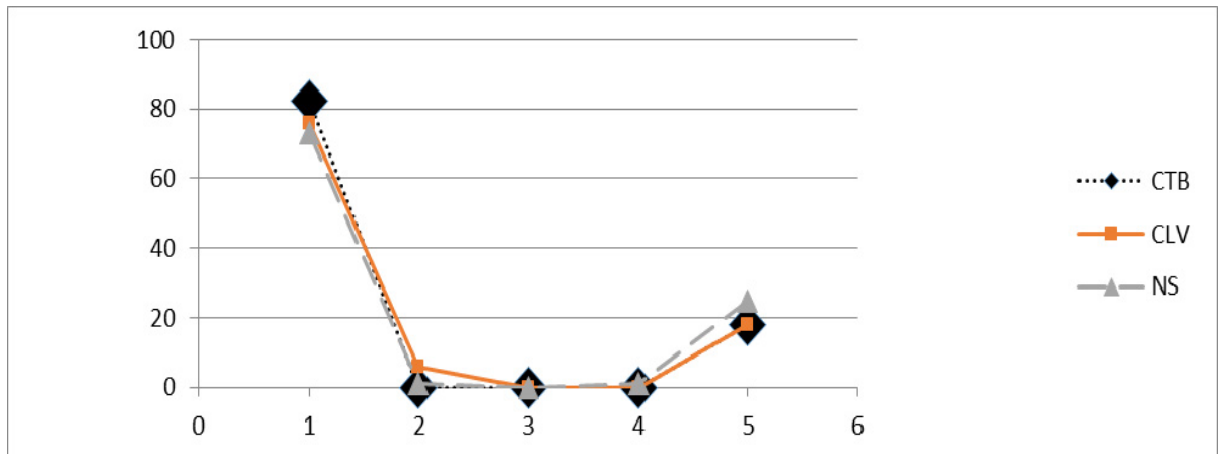


Fig-3: Response pattern for the most difficult words.

Index for x-axis points are: No response (1), Similar to dictionary definition (2), Partially similar to dictionary definition (3), Use of appropriate words or phrases (4), Miscellaneous response (5)

The items which are responded by only 33.33% or fewer subjects are classed as least responded items. These items can also be termed as the most difficult items as these are responded by the lowest number of respondents. For these items also congenital total blind (CTB) group has highest number of no responses (1) and the lowest number of miscellaneous responses (5) which are 82.14% and 17.86% respectively. In fact the congenital total blind (CTB) group for all the three types of items has highest number of no responses (1) and very low miscellaneous responses (5). Congenitally total blind (CTB) and normally sighted (NS) groups did not respond at all by either using similar (2) or partially similar (3) dictionary definition or by using appropriate words and phrases (4). For these items also, normally sighted (NS) group has the lowest number of no responses (1) and the highest number of miscellaneous responses (5).

So, from the above charts it is quite clear that no response (1) has a direct relationship with miscellaneous response (5). The number of miscellaneous response (5) inversely varies with the number of no response (1), i.e. the less the no response (1) the more the miscellaneous response (5). Miscellaneous response (5) indicates creativity of the mind. The blind groups, especially the congenital total blind (CTB) one formed concepts more stereotypically than their sighted counterparts.

An interesting thing to note here is that the response curves for the congenital total blind (CTB) and the normally sighted (NS) are more similar than that of the two visually challenged groups. This indicates that the nature of response for the congenital total blind (CTB) is more similar to the normally sighted (NS) than to the congenital low-visioned (CLV). Again for the most respondent items, responses which are partially similar with the dictionary definition (3) are lowest for the congenital total blind (CTB) and normally sighted (NS) groups. Frozen phrases and words (4) are also used minimally by the congenital total blind (CTB) group. This is significant for the nature of modality used by the congenital total blind (CTB) group. As their responses are very similar to the sighted ones they use words expressing different modalities just like the sighted ones. In fact, their responses contain visual phrases like 'dhObdhObe SAdA' (spotless white) and 'khub phOrsA rOng' (very fair complexion). These uses are like the use of the colour terms by them. When they use the phrase like 'lAl (red) jObA (name of a flower) phul (flower)' they know the colour of the particular flower is red. Here also when they use 'dhObdhObe SAdA' or 'khub phOrsA rOng', they know something is spotlessly white or someone's complexion is very fair.

Another thing is to be noted here. As the response curves are very similar for the congenital total blind (CTB) and normally sighted (NS) groups for the moderately difficult and very difficult words and the percentages of stereotypical responses are also very low, this might indicate that the higher percentages of miscellaneous responses (5) really do not indicate their creativity but actually lack of their conceptual knowledge.

4. Conclusions

From the above data and discussions it is quite clear that there is a definite relationship between no response (1) and miscellaneous response (5). The higher the no response (1) the lower the miscellaneous response (5). It is also quite evident from the data that concept formation in the congenitally total blind (CTB) group is more stereotyped and bound in nature and also more similar with the normally sighted (NS) subjects than the congenital low-visioned (CLV) group. Congenital low-visioned (CLV) group gains an overall advantage in concept formation than the other two groups. For the moderately difficult items they also have the highest percentage of miscellaneous responses (5). Similarity in the response curves for the congenital total blind (CTB) and sighted groups has significance for using of sensory modality in concept formation. Congenital total blind (CTB) subjects use words expressing different modalities including the visual one just like their sighted counterparts. For the moderately difficult and very difficult words the percentages of stereotypical responses are very low for the congenital total blind (CTB) and their sighted peers. This might indicate that the higher percentages of miscellaneous responses (5) are really not for their creativity but for their lack of conceptual knowledge. This has to be explored further. Interestingly, the results with onomatopoeic words also support earlier result regarding the limited use of adjectives by the visually challenged.

Acknowledgements

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