

Metaphor Comprehension by the Congenitally Blind Children

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Abstract:

Vision has great significance in building our cognition and language. One glance is enough for constructing and storing many concepts about the world around. Language is a reflection to those stored concepts. How does losing of this most important sense effects metaphor comprehension? It is one of the most linguistic phenomena should be effected because it depends on comparing two objects or concepts to indicate one of them in terms of the other. The designed test has included 52 children, 26 blind children as variable group and 26 sighted children as control group. Each of these groups is divided into two sub-groups, older group (children who have passed the critical period or the age of 12) and younger group (children who have not passed it yet). The subject have exposed to 80 metaphors constructed within a short story. Results of this study show that congenitally blind children can comprehend metaphor like sighted ones, but they have later onset. They also indicate that blind children who have passed the age of twelve are equal, in their ability in understanding metaphor, to the sighted children who have not passed this age yet.

Key words: Metaphor Comprehension, Congenitally Blind Children, Sighted Children.

استيعاب الاستعارة من قبل الأطفال المكفوفين خلاقيا

الباحث

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الملخص:-

إن من البديهيات أن يحتل النظر مكانة بالغة الأهمية في بناء إدراك و لغة الإنسان بحيث ان النظرة الواحدة كفيلة ببناء وتخزين عدة مفاهيم عن الأشياء من حواله. هذه الدراسة تركز على فكرة او سؤال جوهري يتلخص بمدى و كيفية تأثير فقدان هذه الحاسة الضرورية على استيعاب الاستعارة، خصوصا ان الاستعارة هي احد اهم الظواهر اللغوية و التي تستند في بناءها على المقارنة بين شيئين او مفاهيم و الاشارة الى احدهما من خلال بعض خصائص الاخر. لقد شملت الدراسة على اثنان وخمسون طفل ينقسمون بالتساوي الى مكفوفين و مبصرين (مجموعة متغيرة و مجموعة ضابطة) وفي دورها تنقسم كل من هاتين المجموعتين الى مجموعتين فرعيتين، مجموعة فرعية تضم الاطفال الذين تجاوزوا سن الثانية عشرة و اخرى لمن هم دون ذلك. لقد تم عرض ثمانين استعارة على العينات لأجل تفسيرها. تصنف هذه الاستعارات اعتمادا على محتواها مرة و على نوعها مرة اخرى، حيث يعكس تنوع المحتوى مجمل المظاهر المادية و المعنوية في العالم المحيط كاللون و النسيج المادة او نوع سطحها و الشكل و الحجم و المفاهيم المجردة. اما تصنيفا حسب النوع فيبنى على التقليدية مرة (استعارات تقليدية و اخرى جديدة) و على التعقيد مرة اخرى (استعارات معقدة و اخرى بسيطة). لقد أظهرت نتائج البحث مقدرة ملحوظة على استيعاب الاستعارة من قبل الاطفال المكفوفين لكنها تأتي متأخرة مقارنة بنظرائهم من المبصرين. لقد وجد أن الأطفال المكفوفين الذين تجاوزوا سن الثانية عشرة يتساوون في مقدرتهم مع من المبصرين الذين لم يتجاوزوا ذلك السن بعد. و كنتيجة متوقعة كشفت الدراسة عن دور كبير للبيئة و الفروقات الفردية في عملية نمو مقدرة الاستيعاب تلك بالنسبة للمكفوفين اكثر منها للمبصرين.

1. Introduction

Scholars have investigated various aspects of metaphor, but what still represent the core to their studies is how human mind comprehend metaphor or what are the processes take place in our brains in metaphor comprehension. Many definitions of comprehension have been raised from different points of view. Gibbs gives a general definition of comprehension; it is "the immediate moment-by-moment process of creating meanings for utterances" (1994: 116). The term comprehension always overlaps with the terms metaphor interpretation and metaphor understanding. Sometimes these terms are used as synonyms and others are not. Gibbs distinguishes clearly between comprehension and interpretation. Comprehension is an online process which takes place maximally within a few seconds, while interpretation is a conscious process that is not constrained by time. Psychologists draw heavily in investigating literal and metaphorical comprehension on time of reading data to test their views.

Metaphor comprehension is a highly controversial subject. It has been discussed through different points of view and various experimental studies. However, this hard debate is justified by the great complexity of this subject and its deep roots in the language system as whole. Mori & Nakagawa argue that scholars have to deal with metaphor comprehension heavily because it should reveal much about the natural system of language comprehension (1991: 449). Models of metaphor comprehension have been differentiated according to different points of view of the

theorists. These views have started from the two classical views of metaphor, metaphor as substitution and metaphor as comparison. Knowles & Moon state that according to the former, the process of comprehension is built on recognizing that a specific word or phrase is ploysemous and it carries a secondary metaphorical sense, rather than the literal one. This metaphorical or secondary sense occupies another word or expression's literal sense as a substitute. The second view suggests that metaphor has a similarity between the two entities of a metaphor (or vehicle and topic). The process of comprehension is based on recognizing the similarities between the vehicle and topic (2006: 51-2). The scene has become more complicated when cognitive linguists have introduced their sophisticated investigation of metaphor which considers metaphor as a part of thought. The traditional views look at metaphor as merely a linguistic device (the decorative view of metaphor). Therefore their theses about metaphor comprehension are superficial compared with the new theses.

Cognitive linguistic view has paved the way to a new treatment of metaphor comprehension, especially, in sharing psycholinguists with this subject. Deignan argues that comprehension process, according to the decorative view, involves some steps. They start with (1) accessing the literal sense of the word, (2) then the listener or reader prompts to process the sentence as whole with this literal sense, (3) finding that the word literal sense is unsuitable or the resulted sentence is meaningless, (4) finally search for another sense. This is also called the standard pragmatic

view (2005: 106-7). The second stage of this process is related to Grice's (1975) maxim of quality which postulates that if the literal meaning makes no sense, then the metaphorical meaning should be intended. Both psycholinguists and cognitive linguists have rejected this view in providing evidence that this four stage process (or three stage view for some) lacks long time to take place, while contextualized metaphorical expressions do not take time more than the literal expressions do. Therefore, the recent view adopts what is known as the single stage process (Field, 2004: 178). According to this view, which is supported by cognitive linguists, comprehending literal language and metaphorical language involves the same processes.

2. Related Studies on Metaphor Comprehension

A great number of studies have been conducted concerning metaphor comprehension. One of those studies is conducted by Reynolds and Ortony (1980: 1110-19) on primary school students. They choose their informants at the age 7 to 12 years to investigate whether children have a difficulty in comprehending metaphor or not. The children are exposed to many short stories, which need a sentence to be completed. The researchers provided the correct sentence among other four alternative ones. These are written in a figurative style, such as metaphor and simile, and some in a literal one. The children have chosen the correct answer, in different experiments, when it is formed as a simile rather than as a semantically equivalent metaphor. When the metaphor is written with specifically denoted referent rather

than the referent identity has to be inferred. The researchers have found out that children ability to comprehend metaphor depends on directness (they look to simile as a direct metaphor) of the metaphorical expressions and on the reference specify. In the end, this study proves that children can understand metaphor within a specific space.

Radden (1989: 157-177) mentions a study that has been conducted on bilingual children. This study also relies on Spanish-English informants at the age of 7-12 years old. The study aims to measure the role of factors that influence cross-language transfer, regarding metaphor interpretation, linguistic proficiency, and verbal conceptual repertoire. Johnson has used a well-defined and sophisticated procedure to test informants and scoring answers. His scoring is based on cognitive complexity. He has found out that the older children show greater ability in interpreting metaphor of both languages. The study shows a great connection between the level of comprehension and variables of cognitive development, which are interdependent.

Golden (2010: 35) has tested the comprehension of various kinds of metaphors through exposing them to various groups of 400 Norwegian 15 year old students. The researcher selects 50 metaphors from secondary school's textbooks. Norwegian is the second language of 40% of the students. He constitutes a questionnaire concerning their language practice. This questionnaire represents the basis for categorizing the students into groups. The results show the role of mother language in understanding metaphorical language. Comparing results of different groups indicate

that the group of students who had Norwegian as a second language is lesser in comprehension of metaphorical expressions than the group of native students. Categorization of metaphors into several sets is based on different variables; some of them are related to the metaphors themselves and others are connected with the context in which they appear. In general, this study shows that students have a good competence in understanding metaphorical expressions.

3. Related Findings in Blind Children's Language

No one can deny the strong connection between vision and all our mind activities. Function of language is to reflect what we have already stored in our minds about the world through channels of perception, among which vision is the most significant. The important question here is about the effect of losing this sense. How congenitally blind people generate an image or meaning about the world around them? Is this image similar to that of sighted people? How does this absence of vision affect language and cognition? Boeckx (2010: 47) discusses the relationship between knowledge and experience and emphasizes the high significance of vision as an access to contextual meaning. He assumes that it is so normal to say that congenital blinds have cognitive problems because of their restricted experience.

In the same vein, Bloom (2000: 7) points out that traditionally visual experience is considered as the steering which directs language-learning process. Most of the recent studies about the blind children show that there is no

difference between blind and sighted children regarding language, except for a delay in acquiring it. However, Boeckx and some other optimistic scholars reject even the idea of delay in acquiring language. They depend on some recent studies to deny any distortion and delay in language and cognition (2010: 47). Delay in acquiring language, however, has been demonstrated by many scientific studies on language acquisition by the congenitally blind individuals.

One of these famous studies has been undertaken by Landau & Gleitman (1985) on the three years old blind child, Kelli, regarding visual verbs such as *see* and *look*. They concluded that there is a delay in the onset of language acquisition in many linguistics aspects, and they attribute it to the environmental condition. This attribution is justified by the great need of blind children to environment support. Vinter et al. (2012: 856) indicate that the most important issue in language learning for the blind is the degree of their dependence on the sighted people. One of the dependence forms is the large amount of questions, which they raise about the objects around them. Parents of a blind child are requested to talk and describe objects more than parents of sighted children.

Absence of vision leads the blind to build their conception of the environment, depending on the other senses among which touch and hearing. Paivio & Okovita (1971 cited in Intons-Peterson, 1996: 44) demonstrate that congenitally blind people are better than their sighted peers in remembering words that are highly connected with auditory

imagery, in comparison with the words connected with vision. Sighted people are sensitive to the visual terms more than those related to auditory imagery. Auditory experience can give a limited facilitation or clues about direction and distance, but they cannot often convey a real description of an unfamiliar object. Locomotion and verbal communication are based on hearing rather than any other senses. Tactual experience is fundamental in the spatial qualities perception of objects (Dunlea, 1989: 10).

The ability of acquiring language, despite of the vision absence, leads scholars to adopt two orientations. One of these orientations postulates that concepts at a very abstract level are already found in our minds, and they require only to be triggered by experience. This means that humans have highly innate abstract terms that sighted people rely on the visual channel to trigger them while the blind depends on the optical one. The opposite orientation rejects the idea of innate concepts and points out that our conception is established by our daily interaction with experience depending on mechanisms such as association (Landau & Gleitman, 1985: 100). The case of congenitally blind children and their ability to acquire language has urged some scholars to state that vision is not a necessary channel for language acquisition. Beningfield et al (2005: 329) argue that children learn meaning of visual terms, such as *see* and *look*, and use them in the correct context, though these terms have a haptic reference for them. Although vision unquestionably represents the basic source of experience for sighted children, it is not a necessary basis for language.

Visual experience can be compensated by receiving great amounts of repeated optical and verbal interaction from the people around the blind.

Scholars have repeatedly asked whether acquiring language through different experiences, visual and optical, leads to a similar conception about the world or not. The question is: Do congenitally blind people have the same conception of the sighted people about the world around them? Libet argues that regardless of how large amount of verbal details a congenitally blind person can receive, s/he cannot perceive visual images like normal people (2009: 144). In other words, verbal description cannot create a visual image in the imagination of the blind like those of sighted individuals. In a less dramatic way, constructions of blindness limit all other experiences. However, Gleitman is astonished in finding great closeness between sighted and blind children at the age of three, regarding "visual" terms representations (1994: 176). He had thought to find radical differences. For example, all those children take *look* and *see* as verbs of perception, faraway from "optical" verbs such as *touch*. A blind child only taps on a table when he is asked to *touch it*, but not to *look at*, while he explores all its parts and surface when he is asked to *look at it*.

4. Aim of the Study

The aim of the study is to explore the blind children's ability in understanding metaphors. The study has some theoretical and applied benefits. Theoretically, it can clarify to what extent visual experience (or sense of sight) is important in forming concepts. It also shows to which

degree other senses can be enough to build those concepts. Practically, this study gives a description to one of the most important phenomena of the blind children's language. This description may have a contribution to the approaches of teaching the blind children.

5. Methodology

The fluid nature of metaphor is a real challenge to any researcher attempts to study it empirically. In addition to its abstractness, there are other aspects that affect the degree of comprehensibility of metaphor; some are linguistic and others are non-linguistic. It is necessary to take into consideration the linguistic as well as the non-linguistic background of the comprehender. This challenge increases when the informants are blind children. Therefore, it seems that aim of such study is inaccessible. However, this aim can be achieved by a study finds remedies for all problems. It has to fulfill many requirements and uses different methods in collecting, scoring and analyzing data. The current study has used different techniques in collecting the data and in forming a rational criterion on which data is scored and analyzed.

Measuring the blind children's ability of comprehending metaphor requires comparing it with their sighted peers' ability. Therefore, the sample of this study includes 52 informants; half of them are blind (as a variable group) and the rest are sighted (as a control group). All of the informants are subjected to the same test to measure their ability. Administration of this test has started with preparing its materials (metaphors) and circumstances. The metaphors

have been chosen carefully to appropriate the informants' competence and the required themes and types of metaphors. The researcher has surveyed the adults' judgment on the possible meanings of these metaphors. This judgment is used as a criterion on which the informants' replies are measured. The metaphors have been structured within a short story because of the sensitivity of context for understanding of metaphor and to make the test interesting for the informants. The researcher has tried to minimize the variations and the stress by recording the test in a professional way and conducting it in the informants' houses. This chapter represents the objectives of the test, the informants, the test design, data collection, validity of the test, the scoring system, and the informants' replies.

5.1. The Informants

The informants are divided into two groups: twenty six congenitally blind children (BC) as a variable group and an equal number of sighted children as a control group (SC). Each of these groups is further divided into two subgroups, older group and younger. BC group is classified into two subgroups, Older Blind Children (OBC) and Younger Blind Children (YBC) groups, and SC group is also sub-classified into Older Sighted Children (OSC) and Younger Sighted Children (YSC) groups. Each of OBC and OSC consists of 13 informants at ages 13, 14 and 15 years old and each of YBC and YSC includes 13 informants at ages 10, 11 and 12 years old. Twenty children of the variable group are from Al-Noor Institution in Basra and six of them are from Al-Noor Institution in Najaf. The control group is from

Baghdad Primary School and Dar AL Quran elementary school in Najaf. The informants are randomly selected and their age is between 10 and 15 years old. All of the testees are Iraqi. The study is supported by medical reports explaining the cases⁽²⁾.

5.2. Data Collection and Test Design

1. The researcher has collected and structured eighty metaphors with the help of some writers. Five specialists⁽³⁾ in literary writing have been chosen to write metaphors. Each of them is asked to rewrite a short story entitled *Alshater Hassan* from Al-hakawati website which contains many children stories. This story consists of 1100 words and its style is appropriate to the informants' communicative competence. They rewrite that story with inserting metaphors. They have taken into consideration particularity of the target audience, whereas the story and the metaphors meet the criteria of children literature. They are written in simple style, ordinary words, and with clear ideas. Classification of these metaphors and their nature have been already determined by the researcher. These metaphors are structured to fit in the context of the story. For example, the following lines in (1) are rewritten in (2):

(1) "حُكي أنّ بُستانياً كان له بستانٌ يعتني بأشجاره كلّ يومٍ، يسقيها، ويقلم الثّربة حولها، ويقلم أغصانها....."

"It is said that a gardener had an orchard, he takes care of the tree every day, waters them, plow the soil around, and trim branches..."

"حُكي أنّ بُستانيّاً كان له بستانٌ يعتني بأشجاره كلّ يومٍ، يسقيها، ويقلّب الثّربة حولها، ويقلمّ أغصانها، وبسبب كثرة وتنوع الزهور فيه كانت الحديقة قوس قزح لمن يراه من بعيد...."

"It is said that a gardener had an orchard, he takes care of the tree every day, waters them, plows the soil around, and trims branches. The orchard contains many kinds of flowers, it was a rainbow"

2. These metaphors are classified into:

1. Conventuality: metaphors are divided into sixty novel metaphors and twenty conventional ones.

2. Complexity: novel metaphors are divided into thirty simple metaphors and thirty complex ones.

3. Theme: they are divided according to:

(a) Color: 16 metaphors are about colors (4 conventional and 12 novel),

(b) Shape: 16 metaphors are related to the outer shape of things (4 conventional and 12 novel),

(c) Size: 16 metaphors are related to the size of things (6 metaphors are about big things (2 conventional and 4 novel), and 6 metaphors are about small things (2 conventional and 4 novel)),

(d) Texture: 16 metaphors are related to the substance of things, whether they are soft, hard, or scratchy, and

(e) Abstract Terms: 16 metaphors are about abstract concepts, such as love, mercy, goodness, wickedness, etc.

3. The researcher selects the suitable metaphors from among the five prepared versions of the story and put them in a questionnaire format to investigate adults' judgment about those metaphors. The questionnaire was disseminated to one

hundred college students. Those students, depending on their intuition, act as a jury to judge the content validity of the test. They have been selected randomly from the Colleges of Arts at the University of Basra and the University of Kufa. The questionnaire is designed to reveal whether those metaphors are clear enough or not, novel or conventional, and what are the possible interpretations of them? It supports the validity of data. It also provides guidelines to the analysis of the informants' interpretations of every metaphor. Adults' judgment of the possible metaphors meanings represents a basis on which the informants' responses are measured.

The questionnaire consists of the selected metaphors with four columns: the first column contains two choices, 'clear' and 'unclear'. The students reveal whether the metaphors are clear or ambiguous. The second column also includes two choices, 'novel' and 'conventional'. In this column, the students determine whether the metaphors are common for them or not. The third column contains all the possible interpretations of each metaphor and the main and sup-meaning. The students mark the right interpretations of each metaphor. In the fourth column, the students add other possible interpretation; see Table-2.

4. The story has been recorded in Remax studio by Ayman Al-Araji, a broadcaster in Al-Gadeer TV Channel. He reads the story in the local dialect. When the teller or the broadcaster comes across a metaphor, he asks the child to interpret that metaphor and stops reading for a half minute and the child replies within this period. When the period

ends, the informant hears a bell; then the teller goes on. The researcher has visited the informants at their homes to conduct his test in the normal context to minimize any stress on children that may affect them if they are at schools. Every child is tested individually and is left alone in a room with a recorder device by which the informant listens to the story, and another recorder device to record his replies. Later, the researcher listens to the recorded answers and scores them according to the scoring system which will be explained in the course of this chapter. Such way puts all the informants in the same context.

5.3. Validity of the Experiment

The test design has been validated by a jury⁽⁴⁾. The jury has made modifications to some techniques and items. The jury consists of four members from different colleges. Moreover, the material of the test has been supported with some procedures. The data has been exposed to the adult native speakers to determine, depending on their intuitions, its properties and the possible meaning of each metaphor. The researcher has adopted the Metaphor Identification Procedure (MIP) (the new version is called MIPVU). It is a reliable systematic procedure proposed by a group of researchers to identify related words and metaphor (Steen et al, 2010). Metaphors of this study have been subjected to this procedure to confirm them as real or correct metaphors.

5.4. Scoring

Responses are scored in terms of two properties: ability (*able* versus *unable*), whether a testee responds or not, and violation (*violated* versus *unviolated*) of adults' judgments.

For instance, if a child gives a specific interpretation to a metaphor while adults deny that sense, the response is called a violation. Scoring is based on the questionnaire results of adults' judgment, see Appendix (1). Each metaphor is given two groups of meanings (A and B), where (A) represents the main meaning (or meanings) of a metaphor and (B) stands for the sub-meaning (or meanings) according to the adults. The researcher has adopted a three-grade scale to measure the performance of the informants in this test. Inability of responding and wrong interpretations of metaphors have been given zero, a response located within group (B) has been given one mark, and a response included within group (A) has been given two marks. Some metaphors, especially conventional ones, have only one meaning.

5.5. Data Analysis

The obtained data undergoes statistical analyses, which involves two kinds of comparison, internal and external. The internal statistical analysis includes a comparison between two subgroups within one group. The external statistical analysis contains a comparison between two groups, BC and SC, in general and comparing each subgroup (OBC and YBC) in BC group with the other subgroups (OSC and YSC) in SC group. The analysis also includes comparing types of metaphor (novel vs. conventional and simple vs. complex) and themes (color, shape, texture, size, and abstract terms) within and between the two main groups, BC and SC.

Table (1): The Subjects Scoring Results

The Subject	Age	The Scoring Result	The Subject	Age	The Scoring Result
OBC1	١٥	%٦٠.٥	OSC1	١٥	%٧٤.٣
OBC2	١٥	%٢٥.٦	OSC2	١٥	%٧٥.٦
OBC3	١٥	%٤٠.٦	OSC3	١٥	%٧١.٣
OBC4	١٥	%٤٣.٧٥	OSC4	١٥	%٨٣
OBC5	١٥	%٧٣	OSC5	١٤	%٨١.٨
OBC6	١٤	%٣٤.٣	OSC6	١٤	%٧٨.٧٥
OBC7	١٤	%٥١.٢٥	OSC7	١٤	%٦٣
OBC8	١٤	%٤٥	OSC8	١٤	%٨٣
OBC9	١٤	%٧١.٨	OSC9	١٣	%٨٤.٣
OBC10	١٣	%٦٠.٦	OSC10	١٣	%٨٥
OBC11	١٣	%٣٣.٧٥	OSC11	١٣	%٧٠.٦
OBC12	١٣	%٥٠	OSC12	١٣	%٥٩.٣
OBC13	١٣	%٧٨.٥٧	OSC13	١٣	%٦٣
YBC1	١٢	%١٣	YSC1	١٢	%٤٩.٣
YBC2	١٢	%٣٧.٥	YSC2	١٢	%٥٩.٣
YBC3	١١	%٢٧.٥	YSC3	١٢	%٢٥
YBC4	١١	%٢٠	YSC4	١١	%٥٩.٣
YBC5	١١	%٢٣	YSC5	١١	%٥٠
YBC6	١١	%١٣	YSC6	١١	%٧٧.٥
YBC7	١١	%٣٧.٥	YSC7	١١	%٥٠
YBC8	١١	%١٢.٥	YSC8	١١	%٤٤.٣
YBC9	١١	%٥.٦	YSC9	١١	%٤٠
YBC10	١٠	%١.٨	YSC10	١٠	%٤٥
YBC11	١٠	%١٦.٨	YSC11	١٠	%٣٥
YBC12	١٠	%٥	YSC12	١٠	%٧١.٨
YBC13	١٠	%١.٢٥	YSC13	١٠	%٤٧.٥

6. Statistical Analyses and Discussion of the Results

The researcher has used SPSS software version as a device of analysis⁽⁵⁾. It passes through three tests or three statistical forms: computing Algorithmic Mean, Descriptive Statistics, and ANOVA test. What is relevant to our study among items of these statistics forms are Standard Deviation, Mean and Significance (Sig). Std. Deviation shows to what extent the informants within and between groups are homogenous. Mean reflects the degree of differences between groups. "Significance" indicates the difference between groups, whether it is meaningful and important or not.

The analysis comes across three stages of comparison: (1) In the first stage the metaphors are considered as a chunk without any classification. It involves comparing the two main groups (BC vs. SC), the sub-groups within one main group (OBC vs. YBC and OSC vs. YSC), each sub-group in BC with the counter sub-group in SC (OBC vs. OSC and YBC vs. YSC), and the older blind children group with the younger sighted ones (OBC vs. YSC). (2) The second stage compares the groups through the themes and types of metaphors, for example, the difference between BC and SC regarding color, shape, texture, size, abstract terms, novel, conventional, complex and simple metaphors. (3) The third stage makes a comparison between the items (themes and types) within each group, for instance, the differences in comprehension between items of themes (color, shape, texture, size, and abstract metaphors) and between the types of metaphors (novel vs. conventional and complex vs. simple).

6.1. First Stage of Analysis

The first comparison between the blind children group and the sighted one regarding metaphors as a whole shows a great superiority of sighted children in comprehending metaphors. Means of the two main groups represent this result explicitly. While the mean of SC reaches (100.1538), the opposite mean of BC comes down nearly to the half (52.3462), as it shown in Figure (1). The ANOVA analysis supports this result by referring to the great significance of differences between the two main groups. This test, as in Table-3, shows profound differences not only between the main groups, but also between the sub-groups.

		Sum of Squares	df	Mean Square	F	Sig.
BC vs. SC	Between Groups	29712.481	1	29712.481	27.420	.000
	Within Groups	54181.269	50	1083.625		
	Total	83893.750	51			
OBC vs. YBC	Between Groups	23460.038	1	23460.038	46.556	.000
	Within Groups	12093.846	24	503.910		
	Total	35553.885	25			
OSC vs. YSC	Between Groups	10003.846	1	10003.846	27.842	.000
	Within Groups	8623.538	24	359.314		
	Total	18627.385	25			

OBC vs. OSC	Between Groups	9084.462	1	9084.462	20.092	.000
	Within Groups	10851.385	24	452.141		
	Total	19935.846	25			
YBC vs. YSC	Between Groups	22040.346	1	22040.346	53.615	.000
	Within Groups	9866.000	24	411.083		
	Total	31906.346	25			
OBC vs. YSC	Between Groups	22.154	1	22.154	.036	.850
	Within Groups	14630.308	24	609.596		
	Total	14652.462	25			

Table (3): ANOVA Test of the Comparison between the Groups

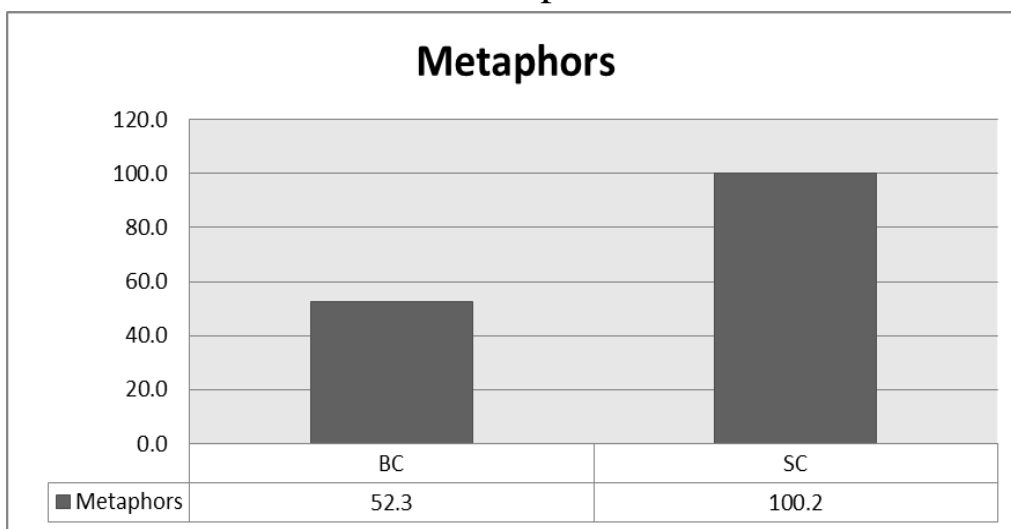


Figure (1): Means of BC and SC

Examining deeply, the analysis reveals more about the differences between blind and sighted children, the researcher makes an internal comparison between the older children who have passed the age of twelve and the younger

children who are still under its umbrella. The ANOVA results, as is shown in Table-3 and means of older blind children group compared with the younger ones show a high degree of differences between them in comprehending metaphor. The mean of OBC is (82.4) while it is only (22.3) for YBC, as in Figure-2. This refers to a poor ability of comprehending metaphor for the younger blind children, compared with the older ones, who have in turn a little ability when they are juxtaposed with their sighted peers.

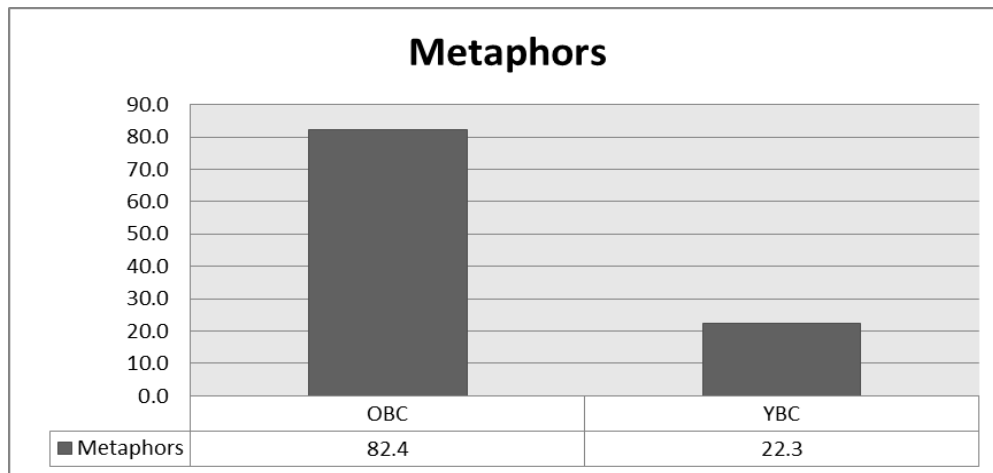


Figure (2): Means of OBC and YBC

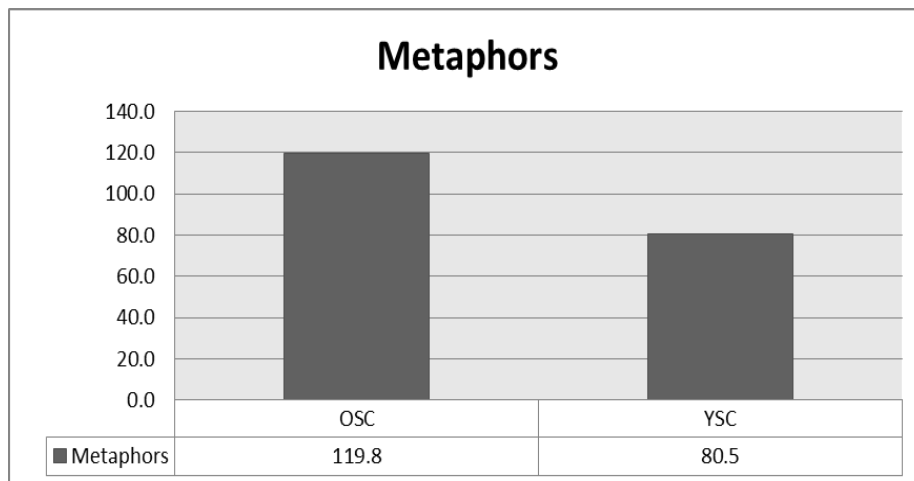


Figure (3): Means of OSC and YSC

In the same way, the two groups of normal children, OSC and YSC, are significantly different; see Table-3 and Figure-3. The degree of differences between these groups is 39 points, which resulted from the difference between values of their means, (119.7) and (80.5). This degree is little compared with the degree of contrast between the sub-groups of blind children, which is (60) points. In other words, the distance between an older blind child and a younger one (the two are blind) is larger than the distance between an older and younger sighted children. It is difficult to find a decisive interpretation for this situation. It could probably be due to the younger blind children, who have little cognitive and linguistic maturity, and a speed development comes later because of a growing experience. Because metaphor comprehension depends widely on world knowledge, blind children may get a speed development at the age after twelve because their ability and curiosity increase to discover the world around. Examining Table-1, one can find out that comprehension of blind children at the age of 10 years old is so low or is, sometimes, not found. This leads us to think about a delay in metaphor comprehension onset. It supports our interpretation in finding a late speed development in comprehending metaphor. This contrast, between the sub-groups of blind and sighted children, may be related to properties connected with the different experiences channels of perception, visual and optical.

Comparing the countered sub-groups across the main groups may also advocate the previous inference. As a reflection to the

first juxtaposition between the main groups (BC vs. SC), the comparison between opposed sub-groups (OBC vs. OSC and YBC vs. YSC) shows great and significant differences between them, as shown in Table-3 and Figures-1 and 2. The degree of contrast between means of OBC (82) and OSC (119) is 37 points, while that of YBC (22) and YSC (80) is 58 points. The degree of difference between the countered old groups is little beside that of younger groups. This result consolidates our inference in realizing a delay in metaphor comprehension onset followed by a fast progress.

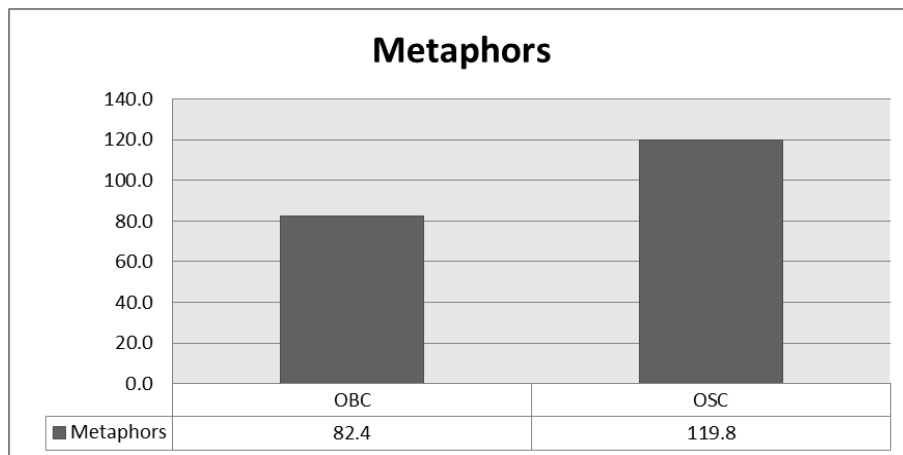


Figure (4): Means of OBC and OSC

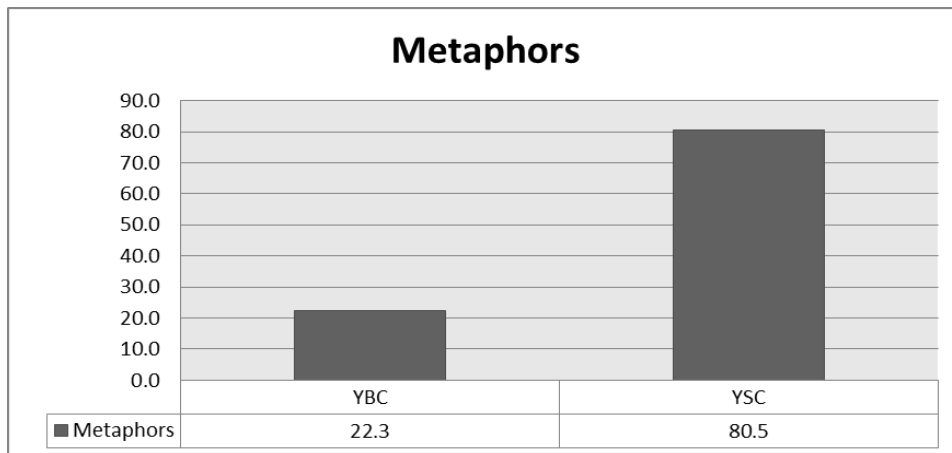


Figure (5): Means of YBC and YSC

The last comparison in this stage is between the older blind children and the younger sighted ones (OBC vs. YSC). This comparison measures the gap between blind and sighted children through age. In opposite to all other results, the ANOVA analysis shows that there is no significant difference between the two groups, as in Table-3. Means of the two groups are so close to each other, (82.3) for OBC and (80.5) for YSC, as in Figure 6. This closeness between these two groups indicates that the blind children who have passed the age of twelve are nearly equal to the sighted children who are still at and under this age in their ability to comprehend metaphor. This comparison and the previous ones go in the same path with many studies conducted on blind children and language, which have found out only a delay in acquiring many linguistic aspects like those discussed in chapter one. Our inference from these juxtapositions is that congenitally blind children have the ability to comprehend metaphor, but in an age more recent than normal children.

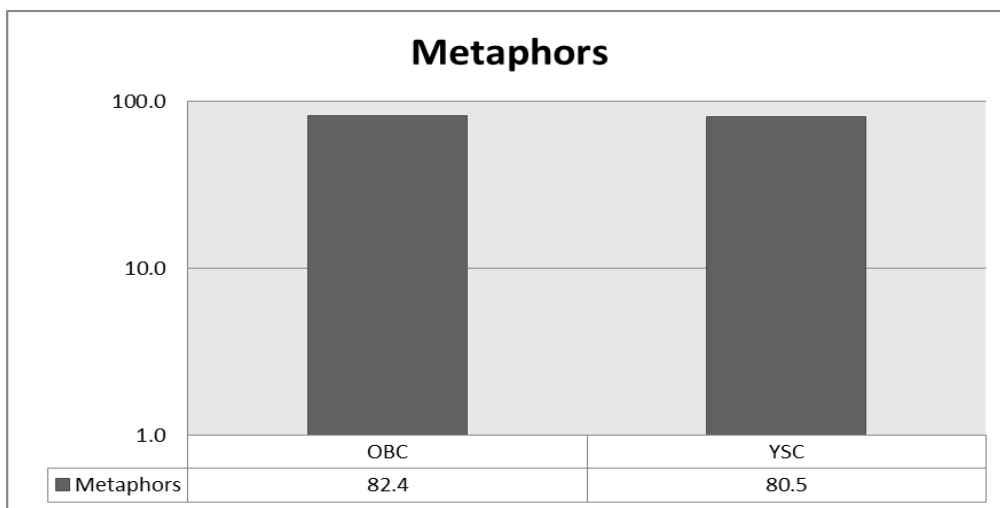


Figure (6): Means of OBC and YSC

Table (4): Descriptive Statistics of the Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BC	26	52.3462	37.71148	7.39583	37.1142	67.5781	2.00	126.00
SC	26	100.1538	27.29644	5.35327	89.1286	111.1791	40.00	136.00
OBC	13	82.3846	26.50327	7.35068	66.3689	98.4004	41.00	126.00
YBC	13	22.3077	17.47562	4.84687	11.7473	32.8681	2.00	60.00
OSC	13	119.7692	14.20771	3.94051	111.1836	128.3549	95.00	136.00
YSC	13	80.5385	22.73256	6.30488	66.8013	94.2756	40.00	124.00

The descriptive statistics shows the extent to which the informants are homogeneous in respect to their replies through counting the standard deviation of each group. It is normal for the main groups to get high degree of deviation (BC and SC) because they contain separated sub-groups. However, deviation in the blind group is higher than the opposite group, as in Table-4. This high degree of dispersion in the blind group is justified by the individual and environmental factors. Individual differences, such as the degree of IQ⁽⁶⁾, represent a serious factor for both groups. Some children are knowledgeable and linguistically competent more than others, especially in metaphor comprehension, which depends on knowledge and linguistic maturity. The environmental factor may lead to deviation in the blind group more than sighted one, because the former depends more upon environment in developing their cognition and language than the latter. Sighted people have the direct access to build their conception about constituents of world, while the blind mostly depends on the sighted

individuals around to describe that world. Opportunity of getting support from environment differs from a blind to another; therefore, they differ in their responses.

However, it is better to focus on the sub-groups in which the informants are closer to each other. The highest degrees of deviation are viewed in the closed sub-groups, OBC and YSC, while the lowest are found in the divergent sub-groups, OSC and YBC. The high recorded level of homogeneity of older sighted children group compared with that of OBC and YSC is probably due to the fact that normal children at this age reach a high level of cognitive and linguistic competence. This advanced competence may give them enough ability to comprehend metaphor after passing threshold of critical period and make them close to each other.

In the contrary, the low degree of homogeneity of the younger blind children is probably due to their general disability to comprehend metaphor. Delay in metaphor understanding onset put the blind children who do not pass the age of 12 at the same level of comprehending metaphor. In other words, all of them are at the same level of ability because they are at the starting point of growing this ability. The high level of deviation in the close groups, OBC and YSC, could be justified by their underdevelopment stage. The two groups are in their way to acquire approximately a stable and advanced cognitive and linguistic competence. Therefore, individual and environmental factors will play a fundamental role in providing them with knowledge to reach that advanced competence. So, it seems reasonable to find heterogeneous replies from the informants.

7. Conclusions

It has been hypothesized in chapter one that blind children have the ability to comprehend a metaphor even though this metaphor is highly connected with visual imagery. It has been assumed that blind children have no linguistic and cognitive deficiency regarding metaphor comprehension. The study is based on the hypothesis in which blind children are equal to their sighted peers in respect to comprehending metaphor but they have only onset delay. The researcher has conducted this investigation to demonstrate this or these hypotheses and he has reached the following conclusions:

1. Congenitally blind children can comprehend metaphor like sighted ones, but they have later onset.
2. There is a great gap in the ability of comprehending metaphor between the blind children who have passed critical period or the age of twelve and those who have not passed yet. The same gap is also found between younger blind children and their sighted peers.
3. The blind children who have passed the age of twelve are equal, in their ability in understanding metaphor, to the sighted children who have not passed this age yet.
4. After the late onset of blind children they get speed development in their ability of metaphor comprehension.
5. Environment and individual differences play a crucial role in process of developing metaphor comprehension ability for blind children.

Bibliography

- (1) This paper is based on an MA thesis written by the second researcher and supervised by the first .
- (2) The reports are available with the researcher.
- (3) Dr. Ahmed Eawiz (Department of Arabic/ College of Arts/ Kufa University), Dr. Dhahir Ali (Department of Arabic/ College of Arts/ Kufa University), Hussain Nasser (Department of English/ College of Arts/ Al-Sadiq University), and Tawfiq Oribi (an Iraqi novelist).
- (4) Prof. Abdullatif Aljumaily/ University of Baghdad, Assist Prof. Dr. Ramadan Muhlhal/ University of Basra, and Assist. Prof. Dr. Adil Al-Thamery/ University of Basra.
- (5) The statistics has been carried out with assistance of the head of Statistics Department/ Collage of Administration and Economics/ University of Basra, Assist Prof. Dr. Waleed Rodeen.
- (6) Intelligence Quotient

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