The effect of canonical word order on the production and comprehension of pseudoclefts in L2

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Abstract

This study investigated the effect of word order and age on the production and comprehension of pseudoclefts in L2 across two experiments. For each experiment 16 female students aged between 179 and 210 months were recruited from a secondary school. These students were divided into two groups based on their age range; one group for investigating the effect of word order and age on the production and another on the comprehension of pseudoclefts in L2 by a test including 27 items. The items of the test included 10 Subject pseudocleft, 10 Object pseudocleft and 7 fillers. Production was examined by a sentence repetition task and comprehension by a picture selection task. The results indicated that (i) Word order is a determining factor in production and comprehension of pseudoclefts in L2. (ii) Age does not significantly affect production or comprehension of pseudoclefts in L2.

Key words: Cleft, Pseudocleft, Word order, Resumption

I. INTRODUCTION

Numerous studies have been conducted on the acquisition and learning of relative clauses (RCs hence forth) by adults and children in different languages of the world. Pseudocleft is a kind of RC which has been less investigated. According to Calude (2008) clefts appear when a simple clause becomes cleaved to focus or highlight one of its constituents. As you can see in (1) the clause is cleaved to focus its subject, *Mona*, in (1a-c) or its object, *a break*, in (1d-f). English is one of the richest languages in cleft types. You can see three types of clefts (it-cleft, Wh-cleft and reversed Wh-cleft) in 1a-f.

Mona asked for a break.

(1) a. It is Mona who asked for a break.   (it-cleft, focusing on subject)
    b. Who asked for a break is Mona.   (wh-cleft, focusing on subject)
    c. Mona is who asked for a break.   (reversed wh-cleft, focusing on subject)
    d. It is a break that Mona asked for.   (it-cleft, focusing on object)
    e. What Mona asked for is a break.   (wh-cleft, focusing on object)
    f. A break is what Mona asked for.   (reversed wh-cleft, focusing on object)

In natural languages of the world some syntactic structures require simpler processes than others while complex structures require further computation. In fact natural languages have different canonical word orders and they vary in the degree of word order flexibility. Basically, canonical word order indicates the simplest sentence-structure (Erdocia et al, 2009). English relies extensively on word order to signal grammatical roles and meaning of sentences (Hakuta, 1982). Unlike English, Persian is a null-subject and head final language and its canonical word order is Subject-Object-Verb (SOV) (Karimi, 2005).

In general, it should be noted that most of the previous studies have reported that both production and comprehension of subject RCs are easier and faster than object ones. The current study investigated the production and comprehension of subject and object pseudoclefts.

Following Urosevic, Carello, Savic, Lukatela, and Turvey (1986), Langus and Nespor (2010), Chan, Lieven, Tomasello (2010), Rahmany, Marefat and Kidd (2011) and Gavarro, Cunill, Muntane and Reguant (2011) the canonical word order in subject pseudoclefts would be faster and easier to comprehend than the non-canonical word order in object pseudoclefts. On the other hand, following Richgels (1983 & 1986), Su (2006), Trudeau, Morford, Sutton (2010), and Candan, Kuntay, Yeh, Cheung, Wagner and R. Naigles (2012) pseudocleft comprehension would be improved over age.

II. LITERATURE REVIEW

A. Word order

Although different orders of subject (S), verb (V) and object (O) do not affect referential meanings but this variety affects the related contextual meaning. Certain word orders like OS are believed to be perceptually more complex than others like SO (Slobin & Bever, 1982; Greenberg, 1966). Although these two orders are equivalent and their representations are the same the latter is said to be evaluated faster, and the process to reach this representation is claimed to be different. Variation affects the time needed for lexical decision, and this is apparently dependent on sentential contexts (Urosevic, Carello, Savic, Lukatela and Turvey, 1986). On the other hand, Erdocia, Laka, Rodriguez-Fornells (in press) found that both word orders SVO and OVS which are derived from the canonical word order SOV in Basque required similar computational resources, with no advantage for the subject-before-object sequence.

Frank, Millotte, and Lassotta (2011) suggest that the effects of lexical frequency not only are not against grammatical representation but also exist at the same time in the linguistic processes. Moreover grammatical word order is performed better than ungrammatical word order in older and younger children, even when sentences include novel verbs where they do not have any pre-prepared lexicalized representation of word order.

Langus and Nespor (2010) studied the relation between observable grammatical diversity of world's languages and individual cognitive system which prefers one kind of structure. They investigated the cognitive reason for preferring one of the two most regular word orders: SOV (Subject Object Verb) and SVO (Subject Verb Object). Some categories like grammaticalization, inflexibility of word order and some theoretical beliefs can be the cause of syntactic preference for SVO. However, there is no obvious reason for selecting SOV . This study through two "gesture-production" experiments and one "gesture comprehension" experiment found that Italian and Turkish participants whose native languages have different word orders prefer SOV structure. They suggested that the "computational" grammatical system does not play a serious role in regular communication system. The fourth experiment of this study which tested the comprehension of prosodic strings of flat words in the participants' native language showed that the computational system of grammar prefers SVO order.

Trudeau et al (2010: p.112) studied the ability of four age groups speaking French as a native language and without any communication disorders to interpret graphic-symbol sequences with different lengths and orders. They also note that previous studies suggested varied processes in operation in using graphic symbols and speech. The findings of this study were: 1.The ability to interpret graphic symbol sequences increases over age.2.Constituent order is an important element in the interpretation of the sequences.3. Variation of the specific word order strategies used depends on the age level and the type of sequence presented. They found that as the participants get older, they show an increase in their capacity to interpret graphic-symbol sequences. In addition, constituent order was an important element in the interpretation of the sequences.

Canonical and derived structures were compared across two self-paced reading and one ERPs experiment by Erdocia et al (in press). In Basque, non-canonical structures require further syntactic computation. It has been understood that in free word order languages, case-marking and canonical word order affect sentence processing. These mechanisms are common in all languages of the world because similar processing patterns have been found in very distant grammatical languages. In their experiment on fully ambiguous sentences, they have also found some evidence that processing fully ambiguous sequences is the same as that of canonical sentences. Therefore, it has been proposed that the preference for simple structures is a universal property in language processing against parametrical varieties of a given grammar.

The interfering effect of the second language (L2) on the first language (L1) in native Spanish speakers who were living in the United States was studied by Ardila, Rosselli, Ostrosky-Solís, Marcos, Granda, Soto, (2000). Three linguistic aspects: 1. Syntactic comprehension, 2. Verbal memory, and 3. Calculation abilities were examined in this article in two separate studies. In the first study the syntactic comprehension of 50 Spanish-English bilinguals were studied. All the participants of this study had attended English schools early in life and their native language was Spanish. The results for the Spanish Syntactic Comprehension Test obtained from Marcos and Ostrosky (1995) were compared with the normative results of another study with 40 Spanish monolingual participants. It was concluded the closer the sentences were to the English syntax, they were more understandable for the participants. Participants who had been exposed to English after they were 5 years old performed better than those exposed to English before 5. In addition girls performed better than boys.

The second study examined verbal memory and calculation abilities in L1 and L2 in a group including 85 Spanish-English bilinguals. This study included parallel versions of English and Spanish tests. The results showed some significant differences between the two languages in verbal learning and calculation ability. The results obtained from verbal memory subtests and calculation accuracy in L1 was higher than those in L2. Implications of bilingualism in neuropsychological testing were analyzed in this study and it was suggested that the effect of bilingualism is minimized.

E. Clefts

a. Differences between clefts and nonclefts

Prince (1978) believes that the difference between clefts and nonclefts is in what has been called "focus" and "presupposition". So following Prince the presupposition of l6b-c is logically the proposition conveyed by 17:
   (16) a. Mary lost her necklace. (noncleft
        b. What Mary lost was her necklace. (wh-cleft)
         c. It was her necklace that Mary lost. (it-cleft)
   (17) Mary lost something.
According to Prince in order to see that 16b-c both presuppose 17, but l6a does not, l6a-c should be negated:
   (18) a. Mary didn't lose her necklace.
        b. What Mary lost wasn't her necklace.
        c. It wasn't her necklace that Mary lost.
Sentence 18a, but not 18b-c, may occur naturally and truthfully in a context like this:

(19) ... In fact, she's never lost anything in his life.

As became evident each of the cleft forms has *Mary lost something* as its *presupposition* and *her necklace* as its *focus* therefore many linguists agree that these two types of clefts (it-cleft and wh-cleft) are "interchangeable". Akmajian (1970:149) noted this by saying that: "they are synonymous, share the same presuppositions, answer the same questions, and in general they can be used interchangeably".

As Lirola (2003) believes, in contrast with what already has been said cleft sentences let the speaker or writer state something in a categorical way, and as this structure emphasizes information which is considered as central in a text, so it is certainly important in the textual organization of discourse.

Research on clefts and *wh* clefts (pseudoclefts)

Second and fourth graders' comprehension of complex sentences was investigated by Richgels (1983), using a picture selection task. Pictures were not shown to subjects until they understood the input sentences. Sentences were clefts and pseudoclefts including relative clauses without markers and auxiliaries. Sentences were either passive or active and their noun-verb-noun relations were either according to children's expectations or against their expectations. The results showed that 1. The performance of fourth graders was better than that of second graders. 2. Active sentences were easier than passive sentences. 3. Sentences according to children's expectations (typical) were comprehended significantly better than those against their expectation (atypical). 4. No significant difference was found in cleft and pseudocleft comprehension. 5. Neither typical passives were significantly easier than atypical passives; nor typical actives were significantly easier than atypical actives. 6. Also neither atypical actives were significantly easier than atypical passives; nor typical actives were significantly easier than typical passives. In addition one comparison of combinations of syntactic and expectancy-related factors was performed in this study, in which the researcher has compared atypical passives with typical actives. 7. The result of this comparison shows a significant difference between second and fourth graders comprehension of cleft and pseudoclefts including relative clauses without markers and auxiliaries. Richgels concluded from this study that children's sentence comprehension ability is under the effect of both syntactic and non-syntactic factors interplay.

Richgels (1986) in two experiments examined the roles of world knowledge and syntactic knowledge of grade school children in comprehension of spoken and written complex sentences. In this study Experiment 1 examined the reading and listening comprehension of 128 second, third, fourth and sixth graders of active and passive, cleft and pseudocleft sentences with relative clauses. It found that reading ability, sentence condition (including mode, voice and consistency of sentence meanings with expectation) and reading ability X sentence condition contain significant effects statistically. The children mostly used and relied on syntactic information with spoken sentences. Just above average readers were able to do so in reading tasks and of course just with active sentences. In Experiment 2, 72 second graders were under examination. At first they were given training in attending to syntactic details, entertaining interpretations contrary to world knowledge, or practice. Some characteristics used in Experiment 1 for above average readers were repeated with all three treatments. The conclusion of this study is that grade school children often use world knowledge since it usually works, but when they become aware that it may not be trustworthy, they change their way and use syntactic information.

Schafer (1996) performing two auditory comprehension studies investigated the role of focus conveyed by a pitch accent, in the comprehension of relative clauses preceded by a complex NP like this, *the propeller of the plane that . . .*. In Experiment1, accenting N1 (propeller) or N2 (plane) increased the possibility that the accented NP would be assumed as head of the relative clause. This result supported the predictions of a Focus Attraction Hypothesis as used for relative clauses. Experiment 2 studied the prosodic status of the relative clause (accented or unaccented) and the type of accent on a potential head of the relative clause. It showed that focus on a potential head of a relative clause absorbs the both accented relative clauses, conveying new information, and unaccented relative clauses, conveying given information. This result supported a clear version of the Focus Attraction Hypothesis against a Congruence Hypothesis, which states that modifiers as only conveyers of new information preferentially are related to other phrases marked as new. The experiment also showed that a contrastive accent on a potential head of a relative clause absorbs relative clauses even more than a focal accent which is suitable for new information.

Lirola (2003) studied the use of several anomalous syntactical structures in English in the short stories by Alvarez called *My English* and *A Genetics of Justice* to show certain facts or certain feelings that are important in her life. Therefore we can say that a relationship exists between the use of words or structures and the author's ideology. Liora's article is within the framework of Systemic Functional Grammar because of these two reasons: a) The significance of context for analyzing the main syntactical processes of thematization and postponement in English and b) Since it studies language in relation to society and analyses the reasons for choosing specific linguistic forms. The main aim of this article was to support that in the presence of ideas the use of certain syntactical structures in English (existential sentences, extraposition, pseudo-cleft sentences, passives, cleft sentences, reversed pseudo cleft and left dislocation) is not at random but those structures have specific communicative implications, as this article has shown it by analyzing some examples in the two short stories. It is concluded from this article that language and context are interrelated, i.e., the language used by Julia Alvarez in the two short stories is clearly related to the social structure presented in her life.

F. Inverted wh clefts

According to Abbot (2000) reversed *wh*-clefts, as it is obvious from the name, have a syntactically postponed *wh*-clause, which is not grammatically presupposed and from this point they are similar to it-clefts.

Lirola (2003) also points out that the following *wh*-forms are found in reversed pseudocleft sentences: *what, why, where, how* and *when*, but the most common are *what* and *why*. Like in these examples which are adapted from Calude (2008):

(32). *A good holiday* is what we all need from time to time.

(33). *In cold winters and hot summers* is when we most need good air-conditioning.

Calude (2008) studied the grammatical structure and discourse role of demonstrative clefts in spontaneous spoken language of New Zealand. Calude claims constructions such as *that's what injured me* or *this is what I don't like* which have been known as reversed wh-clefts previously are different from them. 200,000 words of informal conversation chosen from the "Wellington Spoken Corpus of New Zealand English (WSC)" were examined in the current paper and it is shown that demonstrative clefts are the most prevalent kind of clefts in the spoken data. The conclusion is that the frequency of demonstrative clefts, their distinctive discourse

function and the deictic properties of their cleft constituents make them different from other cleft types. Double cleft is another construction discussed in this paper which shows syntactic un-integratedness, as in "that's what you're told do is learn" or "this is why he left is for the money", it is a combination of the demonstrative cleft and the basic wh-cleft, so that it involves a demonstrative copula and another cleft constituent co-indexed with the first one. Finally Calude (2008) suggests that both demonstrative clefts and double clefts belong to spoken language and are not performance errors and that analyzing their syntax and discourse function would be helpful to both theoretical syntax and computational linguistics.

III. RESEARCH QUESTIONS
1. Does word order have any effect on the production of pseudoclefts in L2?
2. Does age have any effect on the production of pseudoclefts in L2?
3. Does word order have any effect on the comprehension of pseudoclefts in L2
4. Does age have any effect on the comprehension of pseudoclefts in L2?

IV. MATERIALS AND METHODS

A. Participants

In this study 32 Persian-speaking learners of English as a Foreign Language (L2 learners hence forth) aged between 179-210 months were recruited from a female Secondary School for experiments 1 and 2. L2 learners were divided into two groups. One group for investigating the effect of word order and age on the production of pseudoclefts in L2 and another for comprehension then every group was divided into four subgroups based on their age range (179-186, 187-194, 195-202 and 203-210 ms).

B. Materials

The test used in this study included 27 items in English (L2). 10 items were subject pseudoclefts, 10 object pseudoclefts and 7 were fillers. The test used in this study was a standardized test adapted from Rahmany et al (2011). All of the verbs used in the test were in simple past and included *pull, wash, grab, kiss* and *hit* which are one part verbs in English. They were selected since their comprehension process is simpler than compound verbs. All the noun phrases used in the test were animate including: *dog, bear, cow, elephant, horse*, which are very familiar animals, to prevent animacy effects, because according to some researchers like Correa (1995) and Brandt et al (2009) this factor affects children's comprehension. Another material used in production test was a recorder set to record the children's voice in order to be able to double check the responses after the test. Another material used in comprehension test was a booklet including 27 binary pictures, each one related to one item. The participants' task was repeating the sentence read to them by the experimenter and selecting the appropriate picture which matched the sentence read to them. There was just one experimenter who familiarized the participants with the materials and the procedure of the experiments (See appendixes for English and Persian tests and an example of the pictures used along with matched pseudoclefts).

C. Procedure

a. Sentence repetition task

Experiment 1 examined production of pseudocleft structures in L2. In this experiment 18 female L2 learners aged 179-210 months were recruited. They were tested one by one in a quiet room. After greeting and some warm up expressions to reduce stress, the experimenter familiarized the participant with the procedure of testing by the use of one example. The experimenter read out one item to a respondent and she was requested to listen carefully and repeat that item. She was told if she could not get the item (for example in a momentary absent mindedness or difficulty of structure or unfamiliarity of words), it would be repeated just one more time. Then the recorder set was turned on and the experimenter read items one by one in a balanced intonation, after reading each item the participant was permitted to repeat that item. The time needed to test every participant was about twenty minutes. The complete and structurally correct answer was scored 1 and incomplete or deficient one 0.

b. Picture selection task

In this experiment, 16 female L2 learners aged 179-210 months were recruited. They were also tested one by one in a quiet room. After greeting and some warm up expressions to reduce stress, the participant was familiarized with the procedure of testing so that the experimenter showed one of the picture tablets to her and she was told that every item would be read out to her and then she should listen carefully and select one of the binary pictures on the tablet which matched the read item, and for certainty she was requested to do one trial. If she did not understand or showed hesitation, the experimenter explained to her more about the procedure of performance. If the participant did not get the sentence at the first time and requested for repetition, it was read to her just one more time. The time needed to test every participant was about twenty minutes as previous task. The correct answer was scored 1 and incorrect one 0.

D. Data analysis

For analyzing the obtained data a one way repeated measure ANOVA was used for every Experiment, the within group variable was sentence type and the between group variable was age.

V. RESULTS AND DISCUSSIONS

Experiment 1

A. Null hypothesis number 1

The first null hypothesis stated that word order does not have any effect on the production of pseudo-clefts in L2.
In order to test this null hypothesis, the L2 production of the pseudo-clefts on two sentence types was assessed. Table9 presents the related descriptive statistics.

TABLE: 4.9
DESCRIPTIVE STATISTICS FOR L2 PRODUCTION OF PSEUDOCLEFTS IN TWO
SENTENCE TYPES

	Age (in month)	Mean	Std. Deviation	N
Subjective	179-186	.7500	.12910	4
	187-194	.3250	.45735	4
	195-202	.6750	.15000	4
	203-210	.4750	.27538	4
	Total	.5563	.30761	16
Objective	179-186	.7750	.22174	4
	187-194	.6750	.28723	4
	195-202	.7000	.18257	4
	203-210	.5750	.17078	4
	Total	.6812	.21046	16

Results are reported in terms of mean scores of subject and object production among different age groups. As is obvious in the table, the average mean score of object is significantly higher than subject pseudoclefts (.68 versus .55). Figure 4.3 below displays a graphical illustration of the result.
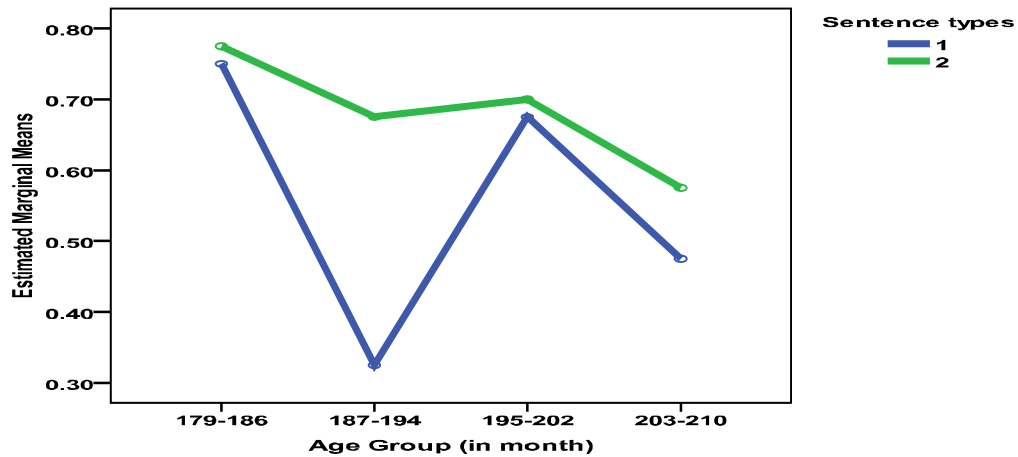

Figure 4.3: Mean average scores of the production of subject and object pseudo-clefts in L2

To see whether the differences were significant or not, a repeated measure ANOVA was run with sentence type as a within-subject factor and age as a between-subject factor.

TABLE: 4.10
ANOVA RESULTS FOR L2 PRODUCTION OF PSEUDOCLEFTS ON TWO SENTENCE
TYPES

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Sentence type	.660	6.186	1.000	12.00	.027	.340
Sentence type * Age	.630	2.351	3.000	12.00	.124	.370

ANOVA detected a statistically significant difference ($F_{(1, 12)}$ = 6.18, p = .02, Effect size = .34); it can be concluded that there is a statistically significant difference between the mean scores of subject and object structures; accordingly, the first null hypothesis of the Experiment was rejected (See Table10).

The interaction effect of the within and between-subject factors, i.e. sentence type-age effect was not significant ($F_{(3, 12)}$ = 2.35. p = .12, Effect size = .37)

B. Null hypothesis number 2

This null hypothesis stated that age does not have any effect on the production of pseudo-clefts in L2. In order to test this null hypothesis, the Between-Subjects Effects ANOVA for the effect of age was used. Table11 displays the results.

TABLE: 4.11
TESTS OF AGE BETWEEN-SUBJECTS EFFECTS FOR L2 PRODUCTION OF
PSEUDOCLEFTS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	12.251	1	12.251	112.011	.000	.903
Age	.386	3	.129	1.177	.363	.227
Error	1.313	12	.109			

ANOVA did not reveal statistically significant effect for age (F = 1.17, p = .36, Effect size = .22); so the second null hypothesis was supported (See Table11).

Experiment 2

A. Null hypothesis number 1

The first null hypothesis stated that word order does not have any effect on the comprehension of pseudo-clefts in L2.

In order to test this null hypothesis, the L2 comprehension of the pseudo-clefts on two sentence types was assessed. Table12 presents the related descriptive statistics.

TABLE: 4.12
DESCRIPTIVE STATISTICS FOR L2 COMPREHENSION OF PSEUDOCLEFTS IN TWO SENTENCE TYPES

	Age (in month)	Mean	Std. Deviation	N
Subject psedocleft	179-186	.1000	.14142	4
	187-194	.0500	.05774	4
	195-202	.1500	.05774	4
	203-210	.0500	.10000	4
	Total	.0875	.09574	16
Object Pseudocleft	179-186	.9000	.11547	4
	187-194	.9000	.08165	4
	195-202	.9250	.05000	4
	203-210	1.0000	.00000	4
	Total	.9313	.07932	16

Results are reported in terms of mean scores of subject and object comprehension among different age groups. As is obvious in the table, the average mean score of object pseudocleft is dramatically greater than subject pseudocleft (.93 versus .08). Figure 4.4 below provides a graphical demonstration of the result. Figure 4.4 below depicts the result graphically.
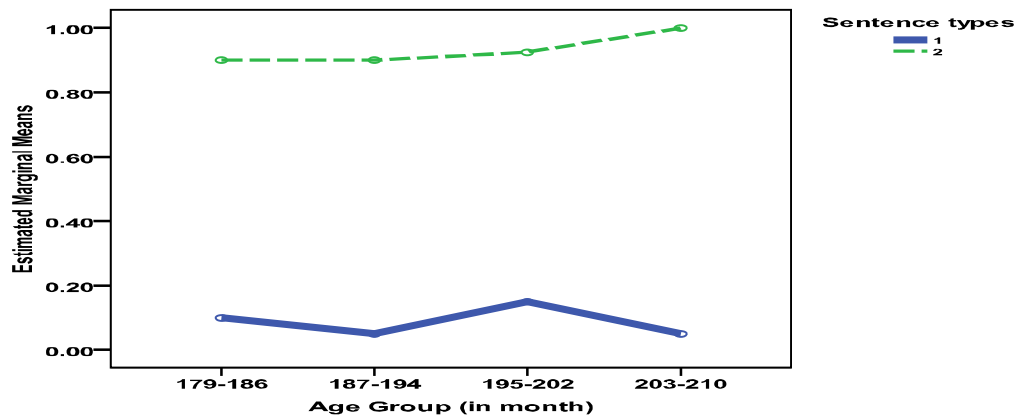

Figure 4.4: Mean average scores of the comprehension of subject and object pseudo-clefts in L2

In order to see whether the differences were significant or not, a repeated measure ANOVA was performed with sentence type as a within-subject factor and age as a between-subject factor.

TABLE: 4.13
ANOVA RESULTS FOR L2 COMPREHENSION OF PSEUDOCLEFTS ON TWO SENTENCE TYPES

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Sentence type	.011	1072.05	1.000	12.000	.000	.987
Sentence type * Age	.639	2.255	3.000	12.000	.134	.361

ANOVA revealed significant effect for sentence type ($F_{(1, 12)} = 1072$, $p = .000$, Effect size = .98); it can be concluded that there is a statistically significant difference between the mean score of subject and object structures; accordingly, the first null hypothesis of Experiment 2 was rejected (See Table13).

The interaction effect of the within and between-subject factors, i.e. sentence type-age effect was not significant ($F_{(3, 12)} = 2.25$. $p = .13$, Effect size = .36)

B. Null hypothesis number 2

This null hypothesis stated that age does not have any effect on the comprehension of pseudo-clefts in L2. In order to test this null hypothesis, the Between-Subjects Effects ANOVA for the effect of age was carried out. Table14 manifests the related results.

TABLE: 4.14
TESTS OF AGE BETWEEN-SUBJECTS EFFECTS FOR L2 COMPREHENSION OF PSEUDOCLEFTS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	8.303	1	8.303	875.901	.000	.986
Age	.018	3	.006	.648	.601	.142
Error	.114	12	.009			

ANOVA results failed to detect statistically significant effect for age ($F = .64$, $p = .60$, Effect size = .14); consequently the second null hypothesis was supported (See Table14).

Discussion

A. Word order

Numerous studies on different languages of the world have shown that every language has a canonical word order and some derived word orders. Canonical word order in English is SVO and OVS is a derived word order. The order of words in pseudoclefts in English is different, if the focus of sentence is on subject it is a subject –focused (VOS) pseudocleft like this example *what grabbed the bear was the elephant* and if the focus is on object it is an object-focused (SVO) pseudocleft like *what the cow washed was the dog* (Kaiser, 2010 and Calude, 2008). The results of Experiment 1 show that word order affects the production of pseudoclefts (p< .05). Concerning the effectiveness of word order in Experiment 1the mean of subject pseudoclefts was .55 while the mean of object ones was .68 and this indicates that object is easier to process than subject. These results reject the findings of Hsiao and Gibson (2003) and Weighall and Altmann (2010) that in English object-extracted RCs are more complex than subject-extracted ones. As well as the finding of Erdozia et al (2005) which argues that displaced elements increase syntactic complexity and non-canonical word order is syntactically more complex. These contradictions can be related to the specific structure of pseudoclefts since the structure of object ones (*what the elephant grabbed was the horse*) is more similar to English canonical word order (SVO) and L2 learners can produce it easier.

The results of Experiment 2 show that the effect of word order on the comprehension of pseudoclefts in L2 is significant (p< .05) so that object pseudoclefts are easier to comprehend

than subject ones similar to what was observed in production. This result is related to the fact that canonical word order is easier to process and comprehend than non-canonical word order, since L2 learners learn canonical word order (SVO) before derived word orders (like OVS). So the findings of Greenberg (1966), Slobin and Bever (1982), Urosevic et al (1986), Erdozia et al's (2005), Hsiao and Gibson's (2003) and Rahmany et al (2011) based on the fact that SO order is easier and faster to process than OS is in fact supported, because the order of object pseudoclefts is "what SVO". On the other hand Friedmann (2007) found that object RCs are more complex than subject ones for individuals with agrammatical aphasia in Hebrew.

C. Age

The results of the two experiments show that age is not effective in the production and comprehension of pseudoclefts in L2. So the outcome of these experiments weakens the claim of Richgels (1983) that second and fourth graders' comprehension of cleft and pseudocleft sentences with RCs in picture selection task is significantly different also the finding of Richgels (1986) that age improvement and respectively world knowledge improvement have positive effect on the grade school children's comprehension of spoken and written complex sentences. The suggestion of Ardila et al (2000) and Trudeau et al (2012) that comprehension increases over age is not supported, too. The reason for the contradiction of the findings of the current study with some previous studies may be the difference between the nature of learning and acquisition (Krashen, 1987) or because this kind of sentence is not taught in school and is a new structure for students so their proficiency or world knowledge do not affect their production or comprehension or it may be due to the fact that all of the participants were from the 179-210 months age range which is more than puberty and their mind is not improving as rapidly as before puberty (Lenneberg, 1967)

VI. CONCLUSIONS

A. Word Order

The current study revealed that word order (WO) is an effective factor in the production and comprehension in L2 learning so that object (O) pseudoclefts are easier and faster to process in both production and comprehension. The results of this study in comprehension do not formally support the foregoing studies in English or other languages like Urosevice et al (1986), Erdozia et al (2002), Rahmany et al (2011) which claimed the process of SO order is simpler than OS which may be because of the specific structure of pseudoclefts. For example, take this simple RC: *The bear that the cow pulled* (object RC) or *The cow that pulled the bear* (subject RC). But when it is changed to pseudocleft it chabges into the following ones: *What the cow pulled was the bear* it is an object pseudocleft and *What pulled the bear was the cow* (subject pseudocleft). On the other hand it could be said that the results apparently support the above mentioned studies because the structure of subject pseudocleft is *what VOS* and object pseudocleft *what SVO*.

As it is obvious, the structure of a pseudocleft is a strange structure that L2 learners never learn at school and when it is read out, they think it is a Wh question and as they have learned in grammatical rules that canonical structure of English sentences is SVO, they think *the bear* is the O that has come after the V and it is the correct order so they understand it easily and the complexity of the sentence does not hinder its processing although this complexity decreases

the speed of process. However, in a simple RC the processing of S RCs is certainly easier than O RCs because the first one is closer to canonical WO.

B. Age

The effect of age on the production and comprehension of pseudoclefts in L2 is rejected across current study. The reason for this result may be due to the fact that all of the participants were from the 179-210 months age range which is more than puberty (Lenneberg, 1967) and since this structure is not included in their books and is a strange structure therefore the means of production and comprehension are approximately the same for all of them.

This study suggests the following implications

1. As studies on production are fewer than comprehension it is suggested that future studies be conducted more on production.

2. This study investigated English pseudoclefts, replication is suggested in other languages of the world.

3. The effect of age on language learning needs more investigation with more control of proficiency level in different ranges as they may reach an agreement.

4. This study was limited to female L2 learners while gender may be an effective factor in production and comprehension of pseudoclefts. Thus, it is suggested this investigation be performed on male students, too.

5. It is also suggested that a replicated study in L2 be conducted on proficiency level instead of age.

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