AN EMPIRICAL STUDY OF RESUMPTIVE PRONOUNS IN ARABS' ACQUISITION OF ENGLISH RESTRICTIVE RELATIVE CLAUSES

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ABSTRACT. *This paper investigates Arabs' acquisition of English restrictive relative clauses with special focus on resumptive pronouns. There are two primary aims of this study: 1- to investigate resumptive pronouns in light of Keenan and Comrie's (1977) Noun Phrase Accessibility Hierarchy, 2- to study whether Arab learners are able to acquire the gap strategy, the alternative strategy of resumptive pronouns, in English restrictive relative clauses. Regarding the first aim, we examine the hypothesis of the Noun Phrase Accessibility Hierarchy which predicts that resumptive pronouns are universal phenomena which occur increasingly in the least accessible positions on the hierarchy to facilitate second language acquisition of relative clauses and the hypothesis of L1 transfer which suggests that resumptive pronouns in Arabs' acquisition of English restrictive relative clauses are resulted from L1 transfer. With respect to the second aim, we follow Hawkins and Chan (1997) and study Arabs' acquisition of English restrictive relative clauses that involve island and non-island structures to test whether they are able to acquire the surface structure that involves gaps and the underlying structure that involves a wh-movement. To achieve the two aims of the study, a grammaticality judgment task was conducted to adult Arab learners of English. Results indicate that resumptive pronouns in Arabs' acquisition of English restrictive relative clauses are resulted from L1 transfer and do not follow the predicted order of the Noun Phrase Accessibility Hierarchy. Furthermore, the results suggest that Arab learners are able to acquire the gap strategy of English restrictive relative clauses which underlies a wh-movement structure. These findings differ from Hawkins and Chan's (1977) in which they argue for the Failed Functional Feature Hypothesis that suggests that adult L2 learners are not able to acquire the new feature that is not transferable from their L1 grammar; but the results are broadly consistent with the Full Transfer Full Access Theory (Schwartz and Sprouse, 1994) which suggests that adult L2 learners are able to acquire new features that are not available in their L1 grammar.*

KEY WORDS: second language acquisition, restrictive relative clause, resumptive pronoun, noun phrase accessibility hierarchy, wh-movement.

INTRODUCTION

Investigating relative clauses (RCs) is a continuing concern within second language acquisition (SLA) researches. The interest in this type of embedded clauses has been raised from its highly frequent use in many languages, as well as from its complex structure that causes significant problems for L2 learners (Algady, 2013). Several attempts have been made to examine the acquisition of English RCs by Arab learners (Aldwayan, 2008; Yuan and Zhao, 2005; Bolotin,

1996). These studies find out that Arab learners of English face considerable problems in learning English RCs due to the complex structure of the RCs and the differences between Arabic and English RCs. This study provides an account of resumptive pronouns (RPs) in Arabs' acquisition of English relative clauses, a major problematic issue that is not explicitly taught in language classrooms and that may hamper L2 acquisition process. Although extensive research has been carried out on SLA of English RCs, no single study has systematically investigated RPs in the acquisition of English RCs by Arab learners. This study provides a systematic account on RPs in Arabs' acquisition of English RCs and offers some important insights into SLA of RCs and language instructions.

Structural background

As is well known, providing a study of the target structure is crucial in revealing some important factors that may affect SLA process. For this reason, the study provides a presentation of the structure of RCs and holds a comparison between restrictive RCs in both Modern Standard Arabic (MSA) and in English with special focus on RPs.

The structure of RCs

RC is a type of embedded clauses that modifies a nominal phrase (Rizzi, 2000). The construction of RCs consists of two syntactic positions that are co referential: the *head noun* of the complex noun phrase (NP) that is modified by the RC, and the internal *relativized position* within the RC (Pérez-Leroux, 1995). There are two main types of RCs: restrictive RCs and non-restrictive RCs. Restrictive RCs (RRCs) have the function of restricting the range of potential references of the modified NP whereas non-restrictive RCs provide extra information that is not essential in identifying the modified NP (Dietrich, 2007). The following examples involve restrictive and non-restrictive RCs respectively.

1-   a. [The [[students]$_N$ [who read a lot]$_{RC}$]$_{NP}$]$_{DP}$ will do well in exams.

b. [My [[brother]$_N$ [who lives in Paris]$_{RC}$]$_{NP}$]$_{DP}$ is a famous artist.
In the first example, the RC cannot be left out since it provides essential information to identify which students the speaker is talking about. On the other hand, the RC in the second example gives further information about the head noun that is not needed in identifying which person the speaker is talking about. The focus of this study is RRCs which is the type that is mainly used in everyday linguistic communication (Dietrich, 2007).

RRCs in MSA and English

It is significant to the study to provide a contrastive analysis of the target structure between the two languages under investigation. The variety of Arabic under investigation is MSA which refers to that high form of the language that is essentially based on Classical Arabic. It is the standard language used in everyday formal situations including academic lectures, modern texts, radio and TV news, journals, conferences, and so on. Since it is the common language that can be used and understood by all Arab learners, it was chosen in this study.

There are a number of similarities between RRCs in English and MSA. In both languages RRCs are post nominal; i.e., the modified nominal element always precedes the RRC. Moreover, most of nominal positions can be relativized in both languages (Algady, 2013). Examples of RRCs with relativized positions of subject, direct object, oblique, and object of comparison, which are the types of RRCs under investigation, are presented in 2 a-d respectively in MSA and English.

2-　　a. al-bintu　llati　　　ta-qraʔu　　il-kitāb
　　the-girl　that.3FS　　3FS-read　　the-book
　　the girl that reads the book
b. al-bintu　llatī　　　qābaltu-ha　　l-bāriħata
　　the-girl　that.3FS　met.1S-her　　yesterday
　　the girl that I met yesterday
c. al-bintu　llatī　　　takallam-tu　maʕa-ha
　　the-girl　that.3FS　talked.1S　　to-her
　　the girl that I talked to
d. al-bintu　llatī　　　hind　taktubu　　ʔasraʕu　　min-hā
　　the-girl　that.3FS　Hind　write.3FS　faster　　than-her
　　the girl that Hind writes faster than

Moreover, it can be seen from the examples above that RRCs in both languages can be introduced by a relative complementizer; the different forms of *ʔallaðī* in MSA and its equivalent in English *that* (Aldwayan, 2008). *That* can be used in all English RRCs except in the genitive, which can only be introduced with the relative pronoun *whose*. However, there are other relative pronouns that are used to introduce English RCs, namely *who*, *whom* and *which*. It is worth mentioning that non-restrictive RCs are introduced only by relative pronouns; the complementizer *that* cannot be used to introduce non-restrictive RCs (Dietrich, 2007). By contrast, there are no relative pronouns in MSA; RCs can be introduced only by the different forms of the complementizer *ʔallaðī* (Algady, 2013).

In MSA, an important distinction needs to be made between two kinds of RRCs on the basis of the definiteness of the modified nominal element: definite RRCs that modify a definite nominal element and indefinite RRCs that modify an indefinite nominal element. The definiteness of the head noun plays an important role in the employment of the relative complementizer *ʔallaðī;* the presence of the relative complementizer is required in the definite RRCs, but in the indefinite RRCs it is illicit. By contrast, such a difference does not exist in English RCs; the complementizer *that* can follow definite and indefinite nominal head (Algady, 2013).

A major difference between English RRCs and MSA RRCs is attested in the strategy used to determine the relativized position. While English RRCs employ a gap strategy for relativization, MSA RRCs generally use a resumptive pronoun to determine the relativized position (Aldwayan, 2008). The resumptive pronoun is written in bold in the following example:

3-　　al-kitāba　ʔallaðī　　　qaraʔ-tu-**hu**　l-baariħata
the-book　that-3MS　　read.1S-**it**　yesterday

the book that I read _____ yesterday

Resumptive Pronouns (RPs)

A resumptive pronoun is a pronominal element that occurs in the extraction site in the RC (McKee and McDaniel, 2001). RP is an alternate strategy of gap that is the default strategy used for relativization. Most of languages, such as English, involve only the gap strategy whereas in other languages, such as MSA, the RPs is the only obtainable strategy for relativization (Alexopoulou, 2010). The status of RPs in English RRCs is significantly different from MSA RRCs in a number of respects. Discussing the differences between English RPs and MSA RPs is at the heart of this study.

MSA RPs

RPs is the dominant strategy for relativization in MSA. These clitic pronouns, i.e. weak pronouns that cannot stand alone, mark the original position of the head noun before relativization. They agree in number and gender with the head noun (Aldwayan, 2008). RPs in MSA RRCs are obligatory in all non-subject positions. However, it is reasonable to assume that there is a pro RP in subject position since MSA is a null subject language. Interestingly, gaps are optional in direct object and can alternate with RPs as in example 4 (Aoun et al., 2010, p.166):

4-   ʔaḍaʕ-tu   l-kitāba   ʔallaðī   qaraʔ-tu-(**hu)** l-bāriħata.
lost-1S   the-book   that-3MS   read.1S-(**it)**   yesterday

I lost the book that I read yesterday.

The exception of this usage of gaps is applied only to definite RRCs; indefinite RRCs exclusively employ RPs (Aoun et al., 2010). The distribution of RPs in MSA RRCs is predictable by of the Noun Phrase Accessibility Hierarchy (NPAH) hypothesis proposed by Keenan and Comrie (1977). It presumes that if a language allows RPs in one position on the hierarchy, it should allow RPs in all lower positions. In MSA, RPs are used in direct object position, and thus they should occur in all lower positions.

The structure that underlies the distribution of RPs in MSA RRCs is a controversial issue. The widely held view is that RPs in the RRCs of MSA is a consequence of a structure that does not involve movement but binding (Sells, 1984, Shlonsky, 1992). This assumption is built on the general fact that RPs in those structures do not exhibit any of the distinctive markings of movement. Regarding islands, RPs fail to exhibit any island sensitivity. The RP in the following example occurs within an adjunct and though the sentence is perfectly grammatical (Aoun et al., 2010, p. 174):

5-   ḍāʕa   l-kitābu llaðī   sāfara   moḥammad-un qabla ʔan ya-qraʔa-**hu**.
lost.3MS the-book that.3MS travelled.3MS Mohammad-SU before that reads.3MS-it

The book that Mohammad had travelled before he read it was lost.

What is most striking about RRCs in MSA is that definite RRCs allow gaps in direct object position. In contrast to RPs, gaps show sensitivity to island violations as indicated by the ungrammaticality of example 6 (Aoun et al., 2010, p.170):

6-   *ḍāʕa   l-kitābu llaðī   sāfara   moḥammad-un qabla ʔan yaqraʔa __.
  lost.3MS the-book that.3MS travelled.3MS Mohammad-SU before that reads.3MS__

The book that Mohammad travelled before he read was lost.
This discrepancy between MSA RRCs with RPs and with gaps in their interference with islands may be interpreted by assuming that definite RRCs can be derived by two different procedures: they can be derived by movement which results in gaps and they can be base-generated which results in RPs. However, much uncertainty still exists in the literature about the underlying structure of MSA RRCs (Aoun et al., 2010). This study holds the most prevalent view in SLA researches which assumes that the underlying structure of MSA RRCs does not involve movement (Algady, 2013; Aldwayan, 2008).

English RPs
According to Chomsky (1977), RRCs in English is formed by a wh-movement of the relative pronoun to the specifier of the CP of the embedded RRC leaving a trace (gap) in the original position of the wh-relative pronoun. Therefore, the relativized position may involve only gaps as a consequence of movement; RPs are formally ungrammatical in English RRCs. However, there is evidence from several corpus studies that RPs are frequently used in spontaneous speech (Cann et al., 2004; Prince, 1990, 1997). The question, therefore, is what are the conditions that elicit the use of RPs in English RCs?

Traditionally, it has been argued that RPs are used in English RRCs as a way of salving island violations. Islands are syntactic constraints out of which no elements can be moved. Island sensitivity is a crucial indicator of movement structure (Chomsky, 1977, Sells, 1984). Thus, RPs are argued to be in complementary distribution with gaps in English; when gaps are illicit because of an island, RPs are used (McKee and McDaniel, 2001). In the following corpus example, movement is blocked by a wh-island thus an RP is used instead of a gap.

7-   "There are always guests who I am curious about what *they* are going to say." (prince, 1990, p.482)

Sells (1984) draws a distinction between two kinds of RPs: true RPs and intrusive RPs. RPs in English RRCs belong to the second type in which they are not licensed by grammar and are only used within syntactic islands. On the other hand, RPs in MSA RRCs are true RPs that are grammticized by the structure in the absence of movement. That is true RPs are used in the structures that involve MERGE and intrusive RPs are used in the structures that involve MOVE within syntactic islands (Alexopoulou, 2010). It is important to recognize that the structural difference between the two types of RPs plays a vital role in their interaction with island violations. Even though intrusive RPs salve island violations, they cannot totally recover the effect of islands. Sentences with intrusive RPs cannot reach the "full acceptability" that sentences with true RPs may reach; sentences with true RPs do not exhibit any island sensitivity (Alexopoulou, 2010, p.11).
In experimental studies, the acceptability rates of English RPs clarifies this structural property of intrusive RPs. Alexopoulou and Keller, (2007) find that RPs cannot be more acceptable than gaps

even when they occur within islands. A slightly different finding is reported in McDaniel and Cowart, (1999) who find that subject RPs are more acceptable than gaps within island-violating structures; object RPs and gaps within island violations are both unacceptable. Keffala (2013) supports this finding as she suggests that RPs in English RCs have the function of saving island violations and ECP effects simultaneously because only subject RPs within island violations is found to be more acceptable than gaps. It is noteworthy that even though subject RPs enhance the acceptability of island-violating sentences, they cannot immunize those sentences from island effects; i.e., sentences cannot be fully acceptable (Alexopoulou, 2010).

However, the generalization that RPs in English are ungrammatical and only used within syntactic islands should be treated with caution. There are examples from corpus studies in which gaps are licit but RPs are used instead. Several explanations are proposed to account for this unexpected usage of RPs.
One possible explanation is suggested by prince (1990) who notes that RPs in English RCs might occur because the relativized position is low on the NPAH proposed by Keenan and Comrie (1977). Presumably the RP in the following corpus example is used because the relativized position is an indirect object which is low on the NPAH:

8-   "...the man who this made *him* feel sad..." (Prince, 1990, p.483)

However, there are some cases in which RPs are produced by native speakers in plain RCs where no possible explanations are proposed and gaps are expected to be used as in example 9:

9-   "I have a friend who *she* does all the platters." (Prince, 1990, p.482)

The issue of RPs in English RRCs remains problematic and thus more research is needed to draw a conclusive account for its unexpected usage. What is important to understand in this study is that although RPs are sometimes produced by native speakers, they are almost always judged as ungrammatical.

LITERATURE REVIEW

In investigating different aspects of RPs in Arabs' acquisition of English RRCs, two theoretical approaches were used: Typological Universals approach with the hypothesis of NPAH (Keenan and Comrie, 1977) and the Universal Grammar approach with three hypotheses, namely Failed Functional Feature Hypothesis (FFFH) (Hawkins and Chans, 1997), Full Transfer Full Access Theory (FTFAT) (Schwartz and Sprouse, 1996), and Direct Access Theory (DAT) (Epstein et al., 1996). Detailed review of these hypotheses and systematic review of relevant literature are provided below.

NPAH:
Keenan and Comrie (1977) propose NPAH, one of the most considerable hypotheses in studying the acquisition of RCs. By investigating RCs in approximately 49 different languages, they suggest that there is a universal systematic hierarchy according to the positions of the NP that is relativized.

The NPAH is given below, in which > signifies the meaning of "is more accessible than" (Keenan and Comrie, 1977, p.66).
Subject (SU)> Direct Object (DO)> Indirect Object (IO)> Oblique (OBL)> Object of Comparison (OCOMP)

The hypothesis assumes that languages do not randomly select the kinds of the relativized positions they allow. For example, if a language allows relativization of DO, then it must allow relativization of a higher position in the hierarchy, which is SU, but it may not allow relativization of lower positions in the hierarchy, which are IO, OBL, GEN, and OCOMP and so on. This claim accounts for the general fact that, cross-linguistically, there is no language that allows relativization of DO, but does not allow relativization of SU. Besides the universality of the existed types of RCs according to the hierarchy, Keenan and Comrie (1977, p.88) suggest that NPAH implies a "psychological ease of comprehension", this suggests that RCs formed from the more accessible positions are easier to be understood.

Regarding the central focus of this study, Keenan and Comrie (1977) assume that RPs are manifested to facilitate the understanding of RCs, thus they are more likely to occur in the least accessible positions in the hierarchy since RCs formed from these positions are harder to be understood. Therefore, the susceptibility of RPs appears to be in the reverse implicational order of the NPAH. In other words, if a language allows RPs in one position, it should allow them in all lower positions in the hierarchy, but it may not allow them in higher positions. By drawing on the concept of movement, this can be interpreted in such a way that higher positions in the hierarchy are relativized by movement, whereas lower positions are relativized by binding.

The NPAH has significant theoretical implications on language acquisition. The presumption is that RCs are structures used in all natural languages; there are some languages that allow RCs formed from only one position which should be the SU, but there is no language that disallows RCs at all. Moreover, relativization in all natural languages should follow this hieratical order. Assuming that L2 is a natural language implies that the universal principles that restrict natural languages will affect the process of SLA. In other words, both L1 and L2 learners will acquire RCs in the order predicted by NPAH (Cook, 1994).

Several attempts have been made to explain the universal ranking difficulty of RCs types and its implicational graded difficulty of acquisition according to the NPAH (throughout this study, types of RCs are defined according to their relativized positions). The Linear Distance Hypothesis and the Structural Distance Hypothesis are two of the most important ones.

Linear Distance Hypothesis
As proposed by Tarallo and Myhilll (1983), the Linear Distance Hypothesis indicates that the complexity of RCs is proportional to the linear distance between the head noun and the relativized position. This assumes that increasing the number of intervening lexical elements between the head noun and the relativized position may result in an increasing processing difficulty of RCs which corresponds the order of the NPAH. DO RCs are more difficult than SU RCs because the relativized position is farther away from the head noun in the DO RCs.

The Structural Distance Hypothesis

In the same vein, Hawkins (1999) suggests the Structural Distance hypothesis which attributes the increasing difficulty of RCs according to the NPAH to the increasing depth of embedding of the relativized position. This means that increasing the number of constituents and structural relations between the head noun and the relativized position will lead to increasing the complexity of the RC. DO RCs are more complex than SU RCs because DO RCs involve more nodes between the head noun and the relativized position.

Whether it is the linear distance or the structural distance between the head noun and the relativized position that determines the complexity of RCs, there is a gradual increase of difficulty in the acquisition of RCs which corresponds the order of the NPAH. Previous studies on the acquisition of RCs provide evidence of the efficiency of NPAH in explaining the graded processing difficulty of the acquisition of RCs (Gass, 1979; Hyltenstam, 1984). Review of the most significant L2 studies that test the NPAH is provided below.

Studies on SLA of RPs according to the NPAH

The main assumption of the NPAH (1977) about RPs is that they are universal strategy that simplifies the acquisition of RCs. Studies on L1 acquisition reported that children use RPs in RCs even though their native languages do not allow them such as English (Pérez-Leroux, 1995) and French (Labelle, 1990). A considerable amount of literature has been published on RPs in SLA of RCs according to the NPAH (Hyltenstam, 1984; Gass, 1979 among others). These studies unanimously take into account the issue of transfer beside the universal principles of NPAH (1977). Gass (1979) studied SLA of English RCs focusing on RPs. She essentially aimed at identifying the effect of L1 transfer and the effect of the universal principles of the NPAH on SLA of English RCs. The participants were 17 high-intermediate and advanced L2 learners of English with 9 different native languages. Among participants' L1s, Arabic, Chinese, and Persian allow RPs in DO, IO, OBL, and OCOMP, whereas Italian, French, Japanese, Korean, Thai, and Portuguese disallow RPs in all types of RCs. The results obtained from an acceptability task indicated that L2 learners' acceptability of ungrammatical RPs was in accordance with the predictions of the NPAH. The highest number of acceptability of ungrammatical RPs was in the OCOMP RCs which then was reduced in RCs higher in the NPAH. The only exception was attested in the GEN where the acceptability of RPs was lower than that in DO. Gass (1979) argues that the position of the GEN in the RC plays an important role in the acceptability of RP within the RC. Furthermore, participants whose L1 allows RPs accepted RCs with RPs significantly more than other participants whose L1 prevents RPs. It is concluded that universal factors and L1 transfer are indispensable in explaining the process of SLA. This finding goes hand-in-hand with the results of Hyltenstam (1984).

Hyltenstam (1984) aimed to study the use of RPs in Swedish RCs by advanced L2 learners. Participants' native languages were Spanish, Finnish, Greek, and Persian. Two of these languages, Spanish and Finnish, are similar to Swedish as they do not allow RPs in all types of RCs while the other two languages allow RPs, Greek in IO, OBL, and OCOMP RCs and Persian in DO, IO, OBL, and OCOMP RCs. According to the results of the elicitation task, Hyltenstam (1984) found that RPs were used by all L2 learners even by learners whose L1 does not have RPs. The RC position

on the NPAH had an obvious effect on the production of RPs. Learners produced RPs in the order suggested by the NPAH with the exception of GEN in which they produced RPs more than in OCOMP. According to this finding, it can be concluded that RPs are universal strategies used to simplify the processing difficulty of RCs. However, the effect of L1 transfer was evident, and RPs were more likely to occur in RCs produced by learners whose L1 allow RPs.

The above studies provide a convincing evidence to consider RPs used by L2 learners as universal strategy. L2 learners whose native languages do not have RPs accept ungrammatical RPs frequently in L2 that also does not allow them. However, the effect of L1 transfer is also evident and cannot be overlooked (Hyltenstam, 1984; Gass, 1979). The question, then, is how to account for RPs in L2 learners whose native languages allow them? This leads to the first question of the study; are RPs in Arabs' acquisition of English RRCs attributed to L1 transfer or to a universal phenomenon?

Universal Grammar (UG)
Central to the entire discipline of SLA are the concepts of L1 transfer and UG. This study will evaluate the roles of these two main concepts in the process of SLA. Regarding the first issue, many studies in SLA have proved that learners' process of acquiring L2 is influenced by their L1 (Yuan, 1998; Haznedar, 1997 among others). The effect of L1 may enhance the process of acquiring L2 (positive transfer) when L1 and L2 share the same properties or it may interfere the process of acquisition (negative transfer) when the two languages have different properties (Ellis, 1994). The second issue, UG, was originally developed to explain L1 acquisition. Chomsky (1981) argues that human brains are equipped with a set of basic rules, UG, that organize all human languages. This argument accounts for the fact that children successfully acquire their L1 even though they receive deficient input (Chomsky, 1981). Although the theory of UG was developed for L1 acquisition, it has widely been used in SLA research. The underlying presumption is that L2 is natural language and thus it should be constrained by UG. However, the issue of the availability of UG to *adult* L2 learners has been a controversial and much disputed subject within the field of SLA (White, 2003).

Concerning the controversial role of UG and L1 transfer in the process of L2 acquisition, three theories have been suggested: FTFAT (Schwartz and Sprouse, 1996), FFFH (Hawkins and Chans, 1997), and DAT (Epstein et al., 1996). These three theories have different predictions for L2 acquisition of functional features (such as, wh-feature, case, and finiteness) not transferable from L1. FTFAT (Schwartz and Sprouse, 1996) predicts that adult L2 learners start learning L2 depending on their L1 grammars, and they have an access to UG that enables them to acquire a new feature not available in their L1. Unlike the FTFAT, the FFFH (Hawkins and Chans, 1997) suggests that adult L2 learners are not able to acquire a feature that is not transferable from their L1 because they have only an access to features that are instantiated in their L1. Both theories assume that L1 grammar was the initial state for SLA. On the other hand, DAT (Epstein et al., 1996) argues that the initial state for SLA is UG, not L1 grammar and adult L2 have an access to UG at all stages. However, both FTFAT and DAT predict that L2 learners are able to acquire features not available in their L1 (White, 2003). To date there has been little agreement on the best hypothesis that accounts for adult L2 acquisition of a wh-feature that is not available in L1 grammar. Two significant studies about SLA of English RCs are provided below.

Studies on RPs and Wh-movement in SLA of English RRCs

It was believed that RPs are indicators of a syntactic structure that does not involve movement. The question that needs to be raised, then, is: are adult L2 learners whose L1s allow RPs able to acquire the structure of movement that is not instantiated in their L1s' grammars? Studies on RPs and island violations in SLA of English RCs attempt to provide adequate answer for this question.

Hawkins and Chan (1997) studied the acquisition of English RRCs by 147 Chinese and 112 French L2 learners. All the participants were divided into three groups according to their proficiency level. The structure of RRCs in both English and French has a wh-movement and thus does not allow RPs. On the other hand, the structure of RRCs in Chinese does not involve a wh-movement, and consequently RPs are allowed. A grammaticality judgment task was used with plain RRCs which involve gaps and RPs, and RRCs with a wh-island and a complex NP island which involve gaps. The results indicated that all French learners were native-like in their acceptance of plain RRCs with gaps and their rejection of RRCs with RPs. Moreover, it was found that the more proficient French learners were, the more sensitive they were to island violations. Hawkins and Chan (1997) argued that advanced French learners had acquired the wh-movement structure since they showed evident sensitivity to island violations. On the other hand, the results of Chinese learners showed that their accurate judgments on plain RRCs with gaps and RPs increased as their level of proficiency increased. Interestingly, Elementary Chinese learners performed more accurately than advanced Chinese do in rejecting island violations. The accurate results of Chinese learners decreased as proficiency increased. Hawkins and Chan (1997) concluded that advanced Chinese learners had not acquired the wh-movement of English RRCs and argued that this finding supports the FFFH which assumes that adult L2 learners are not able to acquire a new feature such as the wh-feature if it is not transferable from their L1.

A replication of Hawkins and Chan's (1997) grammaticality judgment task by Aldwayan (2008) showed different results. Aldwayan (2008) investigated the acquisition of English RRCs by Najdi L2 learners. Najdi is a variety of Arabic which is similar to Chinese as they do not have a wh-movement and consequently they allow RPs. He found that although Najdi learners transfer RPs from their L1, their judgment of plain RRCs got improved with proficiency. The most proficient learners were native-like in accepting gaps and rejecting RPs. The results of island violations showed that the most proficient learners accurately rejected gaps within island structures. Aldwayan (2008) concluded that advanced Arabs are able to acquire the wh-structure of English RRCs that is not available in their L1 grammar. He argued against the FFFH and in agreement with the FTFAT and DAT which argues that adult L2 learners are able to acquire a new feature that is not transferable from their L1. The contradictory findings of the two studies, Hawkins and Chan (1997) and Aldwayan (2008), have raised the second question of the study; are adult Arab learners able to acquire the structure of English RRCs that is not transferable from their L1 grammar?

Research Questions and Hypotheses

The main aim of this study is to clarify several aspects of RPs in Arabs' acquisition of English RCs. Based on the theoretical background and previous studies, this study seeks to address the following two questions:

Question One: Are RPs in Arab learners' acquisition of English RRCs attributed to L1 transfer or are they universal phenomena that are employed increasingly in the least accessible positions on the NPAH (1977)?

Question two: Are Arab learners able to acquire the alternative strategy of RPs, gaps, in English RRCs that involve a wh-movement?
Two hypotheses are predicted for the first research question:

Hypothesis one: RPs in Arab learners' acquisition of English RRCs are universal phenomena and they will follow the order predicted by the NPAH (1977).

Hypothesis two: RPs in Arab learners' acquisition of English RRCs are resulted from L1 transfer and they will be employed in all non-subject positions.
Regarding the second research question, two hypotheses are predicted:

Hypothesis one: Arab learners are not able to acquire the structure of wh-movement of English RRCs that is not available in their L1 grammar.

Hypothesis two: Arab learners of are able to acquire the structure of wh-movement of English RRCs that is not available in their L1 grammar.
In order to test these hypotheses, an experiment was conducted in which RPs are examined systematically in Arabs' acquisition of English RRCs.

METHODOLOGY

To achieve the aim of this study, an experiment was systematically designed to yield quantitative data which can be used to do inferential statistical tests that reinforce the validity and reliability of the results (Abbuhl et al., 2013). Moreover, by using experimental design, we had a control over many independent variables; participants' L1, their proficiency levels, type of L2 learning, and type of the RC; and other extraneous variables; participants' age and onset age of exposure to L2. To recruit as many participants as possible, the experiment was run online. Prior to commencing the main task of the experiment, participants were asked to do a language background questionnaire; then, they were asked to do a placement test in order to determine their proficiency level. The main task used in this experiment is a Grammaticality Judgment Task (GJT). The rationale behind the chosen of this task is based on the assumption that GJTs can provide information about learners' abstract linguistic competence; especially what is possible and not possible in learners' abstract grammatical knowledge (Gass and Mackey, 2012). Although many researchers have challenged the reliability of GJT, it has become a well-established method in investigating grammatical aspects within SLA researches because it provides information cannot be obtained by other data elicitation methods (Ionin, 2011). A detailed description of the participants and the two tasks is provided below.

Participants

Two groups of participants were tested in the experiment: namely, control and experimental group. The control group consisted of 27 native speakers of English; 10 were male and 17 were female. Their age ranged from 16 to 52 (M= 28, 1). The experimental group consisted of 49 native speakers of Arabic, 28 were male and 21 were female. All the participants aged between 22 and 45 years (M= 30, 2). All had started learning English at roughly 12 years old. In order to ensure that participants had the required information to be tested, they were selected from a level, completed High School education, whereby it was assumed that they have learned the structure of RRCs. All of them had studied English for six years in Saudi Arabia public schools while they had four 45-minute English classes per week with non-native instructors. The structure of RRCs is typically introduced in the English language classes at the third level of Intermediate Schools. However, the structure of gaps and RPs was not explicitly taught to them. Furthermore, all the participants had lived in the UK for at least 3 months by the time of the experiment and were using English in communication for at least 15% every day. Participants enrolled voluntarily and they signed a consent sheet before participating.

Placement Test:

Part One of Oxford Test was used in order to identify participants' proficiency levels. It consisted of 40 multiple-choice questions. The participants were asked to choose the appropriate answer from three or four choices.

GJT:

The task was composed of 119 sentences; 23 distracters and 96 experimental sentences designed according to three factors: 1- relativized position (SU, DO, OBL, COMP), 2- relativized strategy (gap, RP), 3- island hood (island, non-island). The factor of relativized strategy is crossing all other factors and the island hood factor is crossing only two levels of the relativized positions (SU, DO). According to this factorial design, 12 conditions were created as illustrated in Table 2.

Relativized position	Island hood	Relativized strategy	Condition
SU	Non-island	Gap	1
		RP	2
	Island	Gap	3
		RP	4
DO	Non-island	Gap	5
		RP	6
	island	Gap	7
		RP	8
OBL	Non-island	Gap	9
		RP	10
OCOMP	Non-island	GAp	11
		RP	12

Table 1: Summary of the test design

By using this design, the predictions of RPs according to the NPAH and the effect of island violation on the acceptability of gaps and RPs were tested. Following Gass (1979), IO was comprised within OBL as a complement prepositional phrase. Moreover, GEN was excluded

because the construction of GEN RRC in English is divergent from MSA which may affect the acceptability of this type of RCs.

To increase the reliability of the test and rule out the possibility that a condition might be judged according to other factors such as vocabulary of the sentences or other grammatical structures, 8 sentences were composed in each condition. All the sentences were natural sentences that might be used in everyday communication and three of them were taken from corpus studies (Pérez-Leroux, 1995; Prince, 1990), in which they were produced by native speakers with RPs in the RRCs. The vocabulary of the sentences was intelligible to less proficient participants. All the RRCs used in the sentences were definite RRCs that were introduced by the complementizer *that*. The sentences were designed with a control sentence which was modified to generate other sentences as in the example below:

10-   a. He is the little kid that talks.(SU, Non-island, gap)

b. He is the "little kid that he talks." (Pérez-Leroux, 1995, p.121) (SU, Non-island, RP)
c. He is the little kid that I am surprised when talks. (SU, Island, gap)
d. He is the little kid that I am surprised when he talks. (SU, Island, RP)
Only an adjunct island was used in this test, which was chosen for its relatively less effect on the naturalness of the sentences. This was decided according to two native speakers' judgment of the task sentences with two kinds of islands: complex NP and adjunct. Sentences with adjunct island were more acceptable than sentences with complex NPs; thus, adjunct island was adopted. All the sentences were then double-checked by two native speaker consultants. Finally, the sentences were randomly distributed and put in the Survey Monkey online tool.

Statistical tests
Data of both tests were analyzed by the statistical package SPSS. The following inferential statistical tests were applied. A one-way ANOVA was used to test the reliability of the classification of Arab learners according to their scores on the proficiency test. Repeated-measures ANOVAs were used to test the results of the GJT. To conduct the needed comparisons, pairwise comparison tests were applied.

RESULTS

This section provides the results of Arab participants on the proficiency test and the results of English and Arab participants on the GJT. The results of statistical tests are also provided.

Results on the proficiency test
According to the results of the Oxford test, Arab participants were divided into three groups: elementary, intermediate, and advanced. Table 3 presents the mean and the standard deviations of the proficiency test scores registered by the three groups.

Level of Proficiency	Mean	Std. Deviation	Number of Participants
Advanced	34.18	2.754	22
Intermediate	26.71	2.365	17
Elementary	19.70	2.751	10

Table 2: Means and std. Deviations of the Oxford test scores (maximum= 40)

One-way ANOVA test indicated that the level of proficiency was significantly different among the three groups of Arab learners (F= 111.6, $p< 0.001$).

Results on the GJT

Before reporting the results of the GJT, it is important to note that this task was not scored as correct and incorrect response; rather, the task was scored according to participants' acceptance of the test item whether their acceptance is correct or not. According to Gass and Selinker (2008), only learners' acceptance scores were used in the analysis because learners' rejection of a sentence might not be necessarily based on the reason supposed by the study. Table 4 provides the mean scores of acceptability of the four groups for the 12 conditions of the GJT.

Number	Condition	Elementary	Intermediate	Advanced	Native
1	SU-Non-island-Gap	4.50	5.47	6.00	6.85
2	SU-Non-island-Pronoun	3.80	4.88	3.68	1.04
3	SU-Island-Gap	4.00	3.06	2.14	0.33
4	SU-Island-Pronoun	4.80	4.12	4.82	1.19
5	DO-Non-island-Gap	4.80	5.88	7.41	7.56
6	DO-Non-island-Pronoun	4.00	4.88	3.64	0.93
7	DO-Island-Gap	4.80	4.24	4.73	2.19
8	DO-Island-Pronoun	4.90	4.47	3.73	1.15
9	OBL-Gap	4.90	5.47	6.77	7.52
10	OBL-Pronoun	4.70	4.41	3.00	1.85
11	OCOMP-Gap	3.50	4.35	5.64	5.30
12	OCOMP-Pronoun	4.10	4.41	3.27	0.22

Table 3: Mean scores of acceptability of the 12 conditions of the GJT (maximum= 8)

It is apparent from the table above that there was a considerable acceptability of RPs in Arabs' results. This study aims to investigate the issue of RPs in Arabs' acquisition of English RRCs by addressing two main questions: are RPs resulted from L1 transfer or are they universal strategy? and are Arab learners able to acquire the alternative strategy of RPs, gaps, in English RRCs that underlies a wh-movement structure? To make the results more practicable in answering these two questions, two sets of analyses were processed.

The first set of analysis examined the results of the following conditions: 1, 2, 5, 6, 9, 10, 11, and 12 that involved plain RRCs with gaps and RPs excluding the island hood factor. It tested whether Arab learners are able to acquire the surface structure of English RRCs that involves gaps and whether RPs are universal phenomenon or they are resulted from L1 transfer. Regarding RPs, two hypotheses are tested. The first hypothesis states that RPs are universal phenomena and they follow the order suggested by the NPAH; i.e., Arab learners will accept RPs increasingly in the least accessible positions on the NPAH. The predicted order of RPs in this study is OCOM, OBL, DO

and SU. The second hypothesis states that RPs are resulted from L1 transfer; that is, Arab learners will accept RPs equally in all non-subject positions. A 4 (relativized position) ×2 (relativized strategy) repeated-measures ANOVA revealed significant main effects of group (F= 5.7, $p < 0.001$), relativized strategy (F= 13.8, $p < 0.001$), and relativized position (F= 132.4, $p < 0.001$); as well as significant interaction effects between group and relativized position (F= 22.9, $p < 0.001$) and between relativized strategy and relativized position (F= 22.2, $p < 0.001$). The interaction effect between group and relativized strategy was found to be not significant (F= 1.02, $p = 0.39$). *Post hoc* pairwise comparisons tests were carried out to further investigate some main effects and interactions.

Regarding the main effect of relativized strategy and the interaction effect between group and relativized strategy, a key aspect that needed to be explored was whether the position of the relativized position on the NPAH affected Arabs' acceptability of RPs. In other words, did they accept RPs increasingly in the least accessible positions on the NPAH? Using *pairwise* comparison tests, the mean scores of acceptability for conditions 2, 6, 10, and 12 that involved the four types of plain RRCs with RPs were compared as shown in Figure 1.
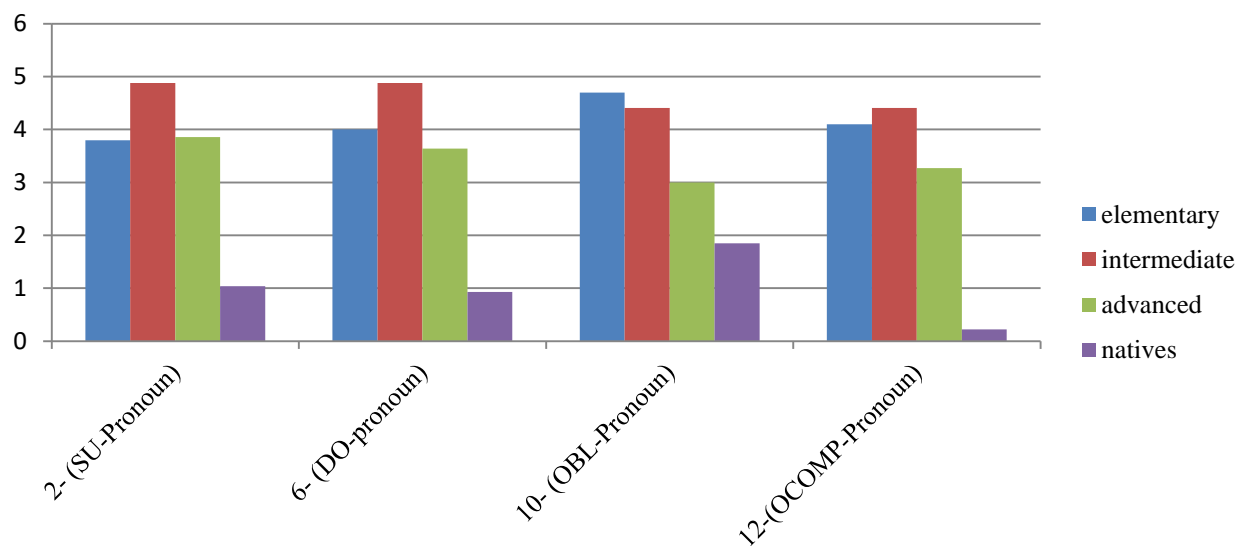

Figure 1: Mean scores of acceptability of RCs with RPs (maximum= 8)
Figure 1 shows that Arab learners accepted RPs roughly equal in all relativized positions. No significant differences were found between Arabs' acceptability of RPs in all relativized positions even in SU. Moreover, it revealed that there was no effect of proficiency levels. No significant differences existed among the three groups of Arab learners at the $p= 0.05$ level. All of them accepted RPs significantly more than the natives ($p < 0.001$).

With respect to the interaction between group and relativized strategy, we investigated Arab and natives' scores of acceptability for conditions 1, 5, 9, and 11 that involved plain RRCs with gaps, consider Figure 2 below.
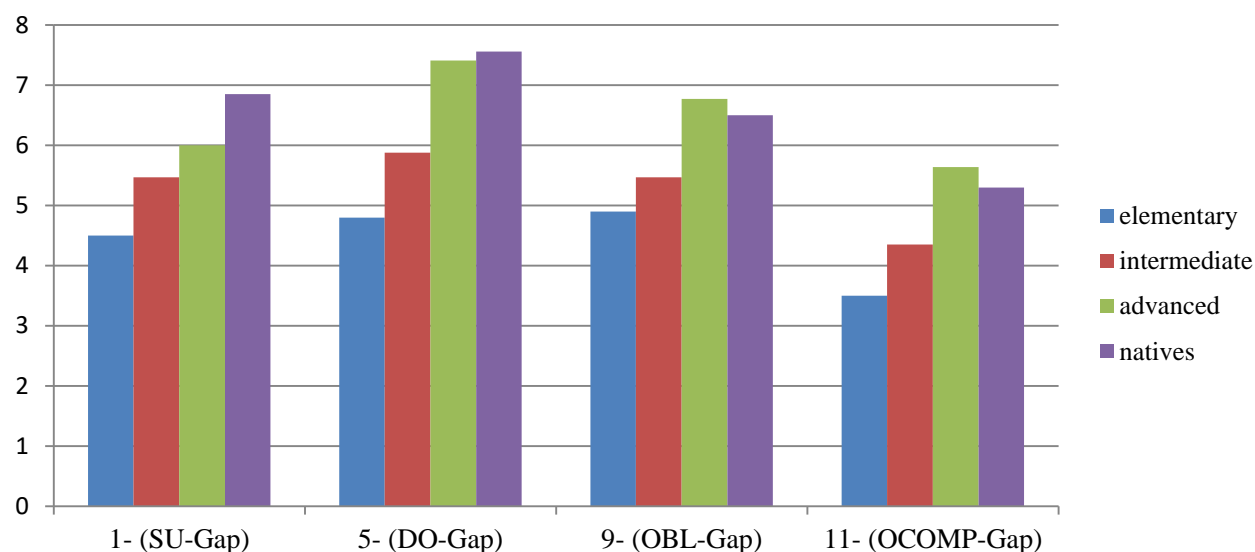
Figure 2: Mean scores of acceptability of RCs with gaps (maximum= 8)

According to Figure 2, the more proficient the participants were, the more correct results they produced in accepting the gap strategy. Further statistical analysis revealed that elementary and intermediate groups' acceptability of gaps significantly differed from natives' acceptability ($p< 0.001$); the difference in acceptability between elementary and intermediate on the other hand was not significant ($p= 0.89$). In contrast with other groups, the advanced group seemed to be native-like in their acceptability of gaps; there was no significant difference in acceptability of gaps between advanced learners and natives ($p= 0.33$).

With respect to the effect of relativized strategy, a pairwise comparison test examined participants' acceptability of gaps and that of RPs. It revealed that there was no significant difference between acceptability of gaps and RPs in the elementary ($p= 0.67$) and intermediate learners' scores ($p= 0.20$). On the other hand, it showed that gaps were significantly more acceptable than RPs in advanced learners and natives' scores ($p< 0.001$).

The second set of analyses examined the results of the following conditions: 1, 2, 3, 4, 5, 6, 7, and 8. It analyzed the acceptability of RRCs that involved gaps and RPs within island and non-island structures to capture the effect of island violations on the acceptability of gaps and RPs. The primary concern of this data set was to check the extent to which Arab learners showed sensitivity to island violation, which indicates they have acquired the wh-movement structure of English RRCs. A 2 (relativized positions) × 2 (island hood) × 2 (relativized strategy) repeated-measures ANOVA examining the effects of relativized position (SU, DO), island hood (island, non-island), on relativized strategy (gap, RPs) revealed significant effects of group ($F= 20.4$, $p< 0.001$), relativized position ($F= 19.4$, $p< 0.001$), island hood ($F= 1117.7$, $p< 0.001$), and relativized strategy ($F= 96.5$, $p< 0.001$); as well as significant interactions between group and island hood ($F= 16.1$, $p< 0.001$), group and relativized strategy ($F= 25.3$, $p< 0.001$), position and island hood ($F= 4.7$, $p < 0.05$), position and relativized strategy ($F= 39.4$, $p< 0.001$), island hood and relativized strategy ($F= 280.8$, $p< 0.001$), group, relativized position and relativized strategy ($F= 4.3$, $p =0.07$), group,

island hood and relativized strategy (F= 26.5, $p < 0.001$), relativized position, island hood and relativized strategy (F= 8.3, $p < 0.05$), and group, relativized position, island hood and relativized strategy (F= 0.96, $p < 0.05$). Furthermore, *post hoc* pairwise comparisons tests were applied to analyze some main effects and interactions.

Regarding the effect of island hood, it was important to reveal whether Arab learners showed sensitivity to island violations. In other words, were gaps within islands less acceptable than those within non-island structures? To this end, the scores of acceptability for conditions, 1, 3, 5, and 7 that involved gaps within island and non-island structures were compared as shown in Figure 3.
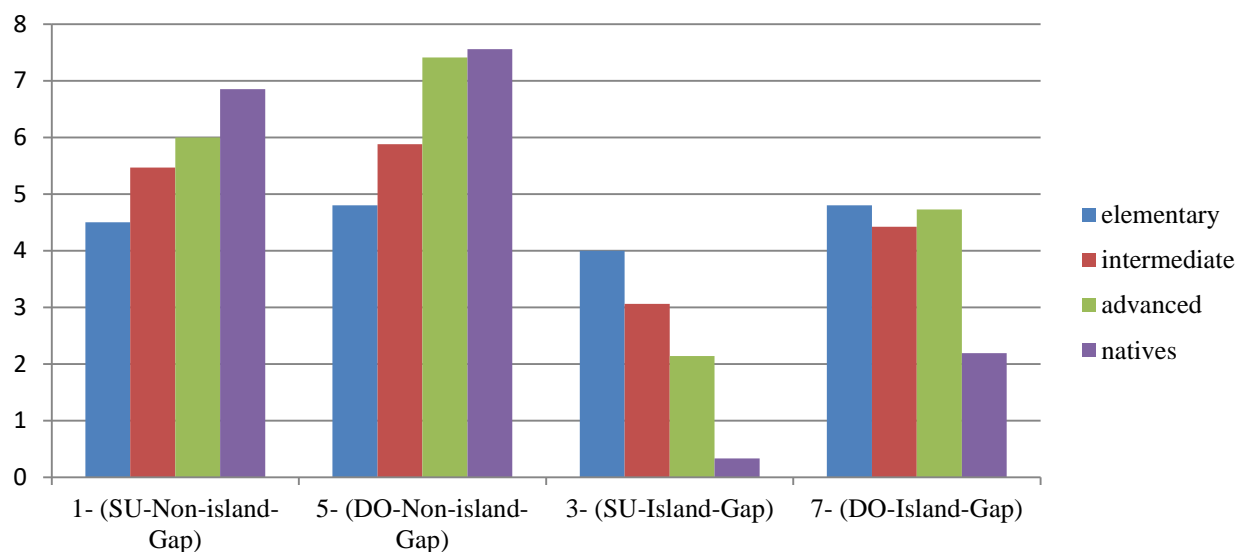

Figure 3: Mean scores of acceptability of gaps within island and non-island structures (maximum= 8)

Figure 3 shows island- non-island asymmetries in participants' acceptability of gaps. A pairwise comparisons test showed that elementary learners' acceptability of gaps in island and non-island structures did not register a significant difference ($p = 0.66$). All other participants accepted gaps in non-island structures significantly more than those in island structures ($p < 0.001$). However, the scores of gaps' acceptability within island structures of all the three groups of Arab learners were significantly different from natives ($p < 0.001$). Overall, these results indicated that the intermediate and advanced groups showed a native-like sensitivity to island violations.

An important aspect of island structure is whether RPs improved participants' acceptability of island-violating structures? Therefore, the scores of conditions 3, 4, 7, and 8 that involved gaps and RPs within island structure were compared, consider Figure 4 below.
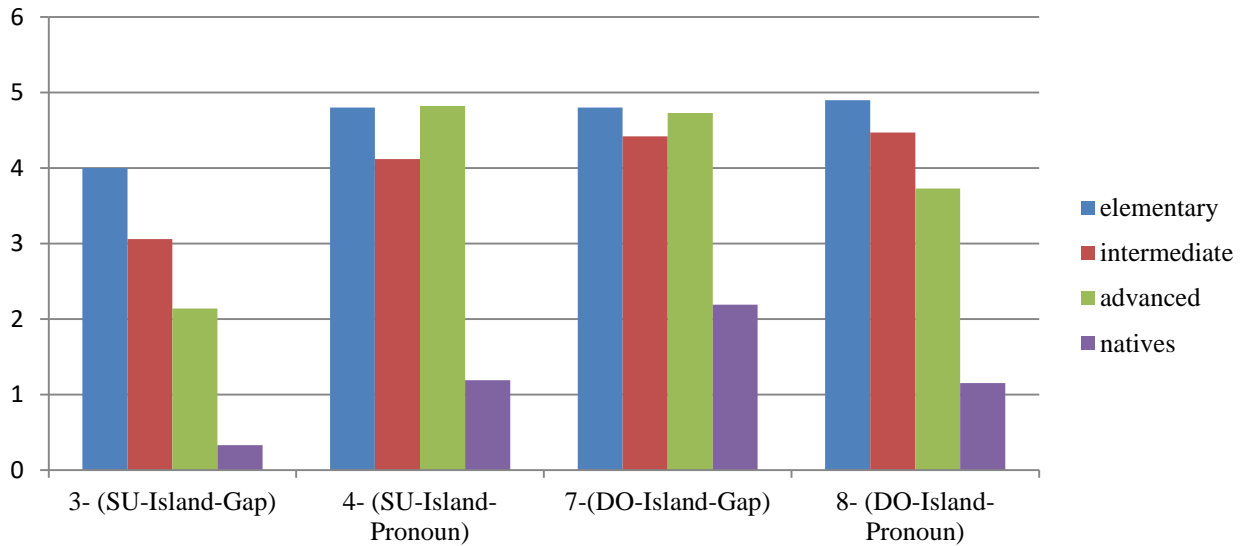
Figure 4: Mean scores of acceptability of gaps and RPs within island violation structures (maximum= 8)

Changes of participants' scores in island structures with gaps and with RPs were compared using pairwise comparisons. Only advanced group was reported to significantly differentiate between islands with gaps and with RPs ($p< 0.005$). RPs did not improve other participants' scores on island structures.

Regarding the effect of islands on RPs, we compared participants' acceptability for conditions 2, 4, 6, and 8 that involved RPs within island and non-island structures in order to clarify if Arab learners accepted RPs within islands more than within non-island structures, consider Figure 5.
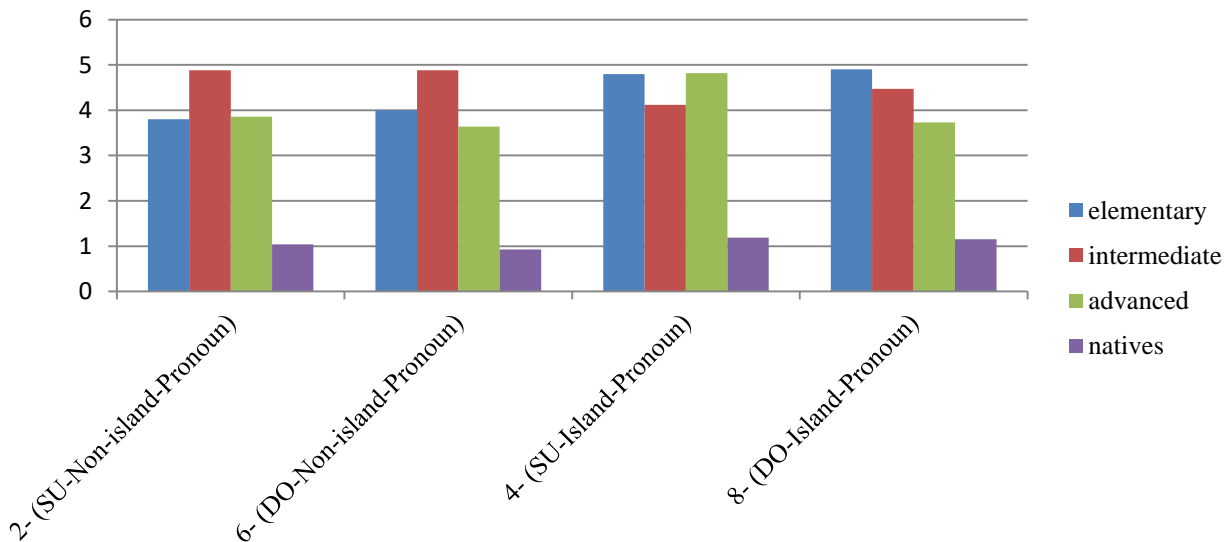

Figure 5: Mean scores of acceptability of RPs in island and non-island structure (maximum= 8)

Overall, figure 5 shows that island hood did not affect the acceptability of RPs. Statistically, only elementary group significantly accepted RPs within island structure more than those within non-island structure ($p < 0.05$). Furthermore, there was no effect of level of proficiency as the differences between the three groups of Arab learners were not significant at the $p = 0.05$ level. All of them were significantly different from natives ($p < 0.001$).

In summary, the single most striking observation to emerge from the data comparison is that Arab learners accepted RPs uniformly across all RP conditions except that elementary group accepted RPs within island more than those within non-island structures. As for the gap strategy, it is found that advanced Arab learners were native-like in accepting the gap strategy of English RRCs. While they were non-native like in accepting gaps within island-violating structures, they showed an evident sensitivity to island violations because they accepted gaps in non-island structures more frequent than those in the corresponding island structures.

DISCUSSION

This study set out with the aim of assessing the status of RPs in the acquisition of English RRCs by Arab learners. The issue of RPs in Arab learners' acquisition of English RRCs raises two main questions. First question is concerned with the ground of RPs; that is whether they are resulted from L1 transfer or they are universal phenomena appear in the process of SLA of RRCs. Second question is concerned with Arabs' acquisition of the gap strategy, an alternative strategy of RPs in English RRCs; that is whether Arab learners are able to acquire the surface structure of English RRCs which involves gap and the underlying structure which involves wh-movement. The primarily finding of the current study is that Arabs accepted all the conditions of RPs to the same degree. In other words, there was no effect of relativized positions, island hood, and also proficiency levels on their acceptability of RPs except that elementary learners accepted RPs within island structures more often than those within non-island structures.

As regards the first question, two hypotheses are tested; the hypothesis of the NPAH (1977) which predicts that RPs are universal strategies used to facilitate processing difficulty and the hypothesis of L1 transfer. According to the NPAH and previous studies of Gass (1979) and Hyltenstam (1984), it was hypothesized that Arab learners will accept RPs increasingly in the least accessible positions on the NPAH. The second hypothesis and the previous study of Aldwayan (2008) suggest that Arabs' acceptability of RPs in English RRCs is attributed to L1 transfer; therefore, Arab learners are supposed to accept RPs in all non-subject positions. In contrast to Gass (1979) and Hyltenstam (1984), results on the GJT show that there is no effect of relativized positions on Arabs' acceptability of RPs. Their acceptability of SU, DO, OBL, and OCOMP RRCs with RPs are roughly equal. Therefore, the hypothesis of NPAH appears to be not confirmed since Arab learners' acceptability of RPs in the most accessible position on the NPAH, SU, is almost equal to that in DO, OBL and to that in the least accessible position, OCOMP. Then, it can be suggested that these results support the second hypothesis. However, if L1 transfer can explain Arabs' acceptability of DO, OBL and OCOMP RRCs with RPs, how about their acceptability of SU RRCs with RPs? MSA does not allow RPs in SU RRCs, thus it is assumed that Arabs would not accept SU RRCs with RPs. It appears that neither the hypothesis of the NPAH nor the hypothesis of L1 transfer can

account for all the results of the current study. However, these results doubtless need to be much scrutinized. There is a possible explanation for the unanticipated result of Arabs' acceptability of SU RRCs with RPs, which appears to run counter to the hypothesis of L1 transfer. Although SU RRCs do not have RPs in MSA, the analysis proposed for SU RRCs is that they are not derived by movement; rather they are base-generated with null RPs. Null RPs turn to be overt in RRCs that involve island structures. Thus, there is an RP in Arabs' mental grammar when they interpret SU RRCs in MSA (Algady, 2013). It seems possible that Arabs' acceptability of RPs in English SU RRCs is due to the fact that in their mental representation of L1 grammar, RPs are allowed in all relativized positions and they transfer this property in L2 grammar. Therefore, it will be more reasonable to conclude that RPs in Arabs' acquisition of English RRCs are resulted from L1 transfer.

The findings of Arabs' acceptability of RPs within island-violating structures appear to confirm this conclusion. If RPs are universal strategies that facilitate processing difficulty, then RPs within islands should be more acceptable than those within non-island structures because islands are complex structures that are more difficult to process than non-island structures. The results show that only elementary group accepted RPs within islands more than those within corresponding non-island structures. Therefore, only the results of the elementary group support the claim that RPs are strategies used to facilitate processing difficulty. Other groups' results prove that RPs are resulted from L1 transfer since their acceptability of them in non-island structures is similar to that in island structures, which are more difficult to process.

With respect to the second question, the results indicate that Arabs' acceptance of gaps improves with proficiency. Whereas elementary and intermediate groups are non-native like in accepting gaps, the advanced group is native-like in their judgment of gaps. A comparison of the two results of Arabs acceptance of RPs and gaps reveals that elementary and intermediate groups are struggling between RPs and gaps since they accepted both of them to the same degree. In other words, it seems that they have optional grammar; they know that gaps are allowed in English RRCs but they do not know that RPs are prohibited. On the other hand, the advanced group is native-like in that they accept gaps more than RPs. However, they behave non-native like in accepting RPs; their results in accepting RPs is significantly more than natives' results. Therefore, it appears that even though the advanced group have acquired the gap strategy, they cannot dispose of RPs. Together these results provide important insights into SLA of English RRCs by Arab learners. It seems that Arab learners' acquisition of the gap strategy progress with proficiency; the most proficient learners are able to acquire gaps in English RRCs even though they have problems in employing the feature of RPs.

An important question is, then, whether Arabs' acceptability of gaps indicates that they have acquired the underlying structure of English RRCs that involves wh- movement? Since the structure of English wh- movement is not instantiated in Arabs' L1, three hypotheses are predicted, namely, FFFH (1997), FTFAT (1996), and DAT (1996). The results of the current study do not support the FFFH and Hawkins and Chan (1997), which argues that adult L2 learners are not able to acquire the structure of L2 that is not available in their L1 grammar. The results show that advanced Arab learners have acquired gaps, and most importantly they show sensitivity to island

violations. Although they are non- native like in rejecting gaps within island-violating structures, their results show an evident effect of islands. Their acceptance of gaps in islands is significantly lower than that in non-island structures. If island sensitivity is considered as an evidence of acquiring a wh-movement, then it can be concluded that Arab learners are able to acquire the underlying structure of English RRCs that involves movement. This finding is in agreement with FTFAT and DAT, which argue that adult L2 learners are able to acquire the structure that is not instantiated in their L1 grammar. Overall, the results of the current study agree with FTFAT which argues that the starting point for L2 acquisition is L1 grammar, that is L2 learners start acquiring L2 by their L1 functional categories and then they are able to acquire the new L2 functional categories given adequate input. Arab learners seem to start acquiring the structures of English RRCs employing their L1 grammar because the results of GJT show that elementary and intermediate groups have optional grammar; their acceptability of gaps and RPs are almost equal. As proficiency increases, Arab learners seem to have acquired the new structure that is not transferable from their L1 grammar; the more proficient learners are native-like in accepting gaps more than RPs and show evident sensitivity to island-violating structures.

One of the issues that emerges from these findings relates specifically to the input that Arab learners need to acquire the structure of English RRCs. Traditionally, learners are assumed to acquire L2 when there is sufficient positive evidence in the input that they have exposed to. Positive evidence depends on only grammatical constructions from L2 (Chomsky, 1989). If Arab learners only learn English RRCs from positive evidence, how do they rule out RPs? A possible answer is that the frequent use of gaps in English RRCs would be enough to prevent the use of RPs. Arab participants in this study have studied English for at least six years and they have lived in an English-speaking country for at least three months; nevertheless, they consistently have problems in RPs. To overcome the problem of RPs, Arab learners need to have positive evidence in their input as well as negative evidence which inform them that RPs are ungrammatical in English RRCs. Therefore, language instructors should provide Arab learners with negative evidence in English classrooms which contains error corrections and explanation of what is impossible in English RRCs.

CONCLUSION

This study aimed at providing a systematic study of RPs in Arabs' acquisition of English RRCs in light of Keenan and Comrie's (1977) NPAH and Hawkins and Chan (1997). The results of the GJT have been unable to demonstrate evidence for the NPAH. RPs in Arabs' acquisition of English RRCs have been found to be resulted from L1 transfer. As for the alternative strategy of RPs in English RRCs, it has been found that advanced Arab learners are able to acquire the gap strategy. Moreover, advanced Arab learners showed an evident sensitivity to island violations which has indicated that they have acquired the underlying structure of English RRCs that involve wh-movement. This finding differs from Hawkins and Chan (1977) and do not support the FFFH which argues that adult L2 are not able to acquire a new feature if it is not transferable from their L1 grammar. The findings observed in this study have mirrored Aldwayan (2008) who have found that Arab learners are able to acquire the wh-feature that is not available in their L1 grammar. Both studies have supported the FTFAT which indicates that adult L2 learners are able to acquire new features that are not transferable from their L1.

The study provides evidence for the ground of RPs in Arabs' acquisition of English RRCs. It has been found that Arab learners start learning the structure of English RRCs by their L1 grammar, and thus they transfer the property of RPs. Understanding the ground of the redundant ungrammatical RPs is crucial for language instruction. Language teachers should provide Arab learners of English with a contrastive explanation of RRCs in both languages to overcome the problem of RPs.

Suggestions for future research

- The current study has shown that advanced Arab learners of English cannot dispose of RPs. It would be worth conducting the study on more advanced or near native Arab learners to test their end-state grammar.
- The current study did not use production data. It would be informative for future studies to use spontaneous production data to test Arabs' ability to acquire the gap strategy of English RRCs.

References

Abbuhl, R. et al. 2013. Experimental research design. In: Podesva, R. J. and Sharma, D. eds. *Research Methods in linguistics.* Cambridge: Cambridge University Press, pp.116-132.

Aldwayan , S. N. 2008. *The acquisition and processing of wh-movement by Najdi learners of English*. Ph. D. thesis, University of Kansas.

Alexopoulou, T. 2010. Truly intrusive: resumptive pronominals in questions and relative clauses. *Lingua*. **120**(3), pp.485-505.

Alexopoulou, T. and Keller, F. 2007. Locality, cyclicity and resumption: At the interface between the grammar and the human sentence processor. *Language.* **83**, pp.110-160.

Algady, D. 2013. *The of relative clauses: how do second language learners of Arabic do it?* Ph. D. thesis, University of Wisconsin-Milwaukee.

Aoun, J. E. et al. 2010. *The syntax of Arabic*. Cambridge: Cambridge University Press.

Bolotin, N. 1996. Arabic speakers' resetting of parameters. In: Eid, M. eds. *Perspectives on Arabic Linguistics VIII*. Philadelphia: John Benjamins, pp.135-157.

Cann, R. et al. 2004. Data at the grammar pragmatics interface: The case of resumptive pronouns in English. *Lingua.* **115**, pp.1551–1578.

Chomsky, N. 1977. On Wh-Movement. In: Culicover, P. et al. eds. *Formal Syntax*. New York: Academic Press, pp.71-132.

Chomsky, N. 1981. *Lectures on Government and Binding*. Dorcrecht: Foris.

Chomsky, N. 1989. Some notes on economy of derivation and representation. *MIT Working Papers in Linguistics*. **10**, pp.43-74.

Cook, V. 1994. *Linguistics and second language acquisition*. London: The Macmillan Press LTD.

Dietrich, H. 2007. *Relative Clauses with Relative Pronouns*. Norderstedt: GRIN Verlag.

Ellis, R. 1994. *The Study of Second Language Acquisition*. Oxford: Oxford University Press.

Epstein, S. et al. 1996. Second language acquisition: Theoretical and experimental issues in contemporary research. *Behavioral* a*nd Brain Sciences.* **19**, pp.677–758.

Gass, S. 1979. Language transfer and universal grammatical relations. *Language Learning.* **29**(2), pp.327-344.

Gass, S. M. and Mackey, A. 2012. *Data Elicitation for Forign and Second Language Acquisition Research*. New York: Taylor and Francis.

Gass, S., M., and Selinker, L. 2008. *Second Language Acquisition: An Introductory Course*. New York: Routledge.

Hawkins, J., A. 1999. Processing complexity and filler-gap dependencies across grammar. *Language.* **75**(2), pp.244-285.

Hawkins, R., and Chan, C. Y. 1997. The partial availability of Universal Grammar in second language acquisition: The failed functional features hypothesis. *Second Language Research*. **13**(3), pp.187-226.

Haznedar, B. 1997. L2 Acquisition by a Turkish-speaking Child: Evidence for L1 influence. In Hughes, E. et al. eds. *Proceedings of the 21st Annual Boston University Conference on Language Development*. Somerville: Cascadilla Press, pp.257-268

Hyltenstam, K. 1984. The use of typological markedness conditions as predictors in second language acquisition: The case of pronominal copies in relative clauses. In: Andersen, R. eds. *Second Languages: A Cross-linguistic Perspective,* pp.39-58.

Ionin, T. 2011. Formal theory based methodologies. In: Mackey, A. and Gass, S. M. eds. *Research Methods in Second Language Acquisition.* Chichester: Wiley-Blackwell, pp.30-53.

Keenan, E. L., and Comrie, B. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry*. **8**(1), pp.63-99.

Keffala, B. 2013. Resumption and gaps in English relative clauses: Relative acceptability creates an illusion of 'saving'. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society*. **37**(1), pp.140-154.

Labelle, M. 1990. Predication, Wh-movement, and the development of relative clauses. *Language Acquisition*. **1**, pp.95-119.

McDaniel, D. and Cowart, W. 1999. Experimental Evidence for a Minimalist Account of English Resumptive Pronouns. *Cognition,* **70**, pp.15-24.

McKee, C., and McDaniel, D. 2001. Resumptive pronouns in English relative clauses. *Language acquisition*. **9**(2), pp.113-156.

Pérez-Leroux, A. T. 1995. Resumptives in the acquisition of relative clauses. *Language Acquisition.* **4**(1-2), pp.105-138.

Prince, E. F. 1990. Syntax and discourse: A look at resumptive pronouns. *Berkeley Linguistics Society.* **16**, pp.482-497.

Prince, E. F. 1997. On kind-sentences, resumptive pronouns, and relative clauses. In Gregory R. et al. eds. *Towards a social science of language: Papers in honor of William Labov*. Cambridge: Cambridge University Press, pp.223-235.

Rizzi, L. 2000. *Comparative Syntax and Language Acquisition*. London: Routledge.

Schwartz, B. D., and Sprouse, R. A. 1996. L2 Cognitive States and the Full Transfer/Full Access Model. *Second Language Research.* **12**(1), pp.40-72.

Sells, P. 1984. Syntax and semantics of resumptive pronouns. PH. D. thesis, University of Massachusetts.

Shlonsky, U. 1992. Resumptive pronouns as a last resort. *Linguistic Inquiry.* **23**, pp.443-468.

Tarallo, F. and Myhill, J. 1983. Interference and natural language processing in second language acquisition. *Language learning.* **33**(1), pp.55-76.

White, L. 2003. *Second Language Acquisition and Universal Grammar*. Cambridge: Cambridge University Press.

Yuan, B. 1998. Interpretation of Binding and Orientation of the Chinese Reflexive ziji by English and Japanese Speakers. *Second Language Research,* **14**(4), pp.324-340.

Yuan, B. and Zhao Y. 2005. Resumptive pronouns in English-Chinese and Arabic-Chinese interlanguages. *International Review of Applied Linguistics in Language Teaching*. **43**, pp.219-137.