The Usefulness of Explicit Grammar Teaching: An Investigation of Syntactic Satiation Effects and Acceptability Judgements in Libyan EFL Contexts

Aisha Fathi Abugharsa

The School of Media and Performing Arts

Middlesex University

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Abstract

This study explores the possibility that techniques based on 'syntactic priming', a tendency to produce utterances with structures individuals have recently been exposed to, and 'syntactic satiation', which leads individuals to judge previously unacceptable utterances as acceptable, can be used to evaluate second language teaching methods. This is based on the assumption that the more robust an individual's linguistic intuitions, the less susceptible they are to priming or satiation effects. An experimental methodology was developed and used to compare the effectiveness of the explicit ('Grammar Translation') method currently used to teach English in Libyan universities with an implicit ('Direct') method. Both methods present only positive evidence, i.e. what are assumed to be grammatical forms, and do not present what are assumed to be ungrammatical forms. The study assumed a 'Principles and Parameters' approach on which second language learning involves setting or resetting parameters to those relevant to the language being acquired. It focused on the 'verb raising parameter', which has different settings in Arabic and English, and on yes-no questions and adverb placement, whose structures are partly determined by the setting of this parameter. One group of participants was taught using the explicit method and one using the implicit method. After teaching, each group was exposed to activities designed to induce priming and satiation. For yes-no questions, the results showed robust intuitions for both groups. For adverb placement, they showed susceptibility to priming and satiation effects for the group taught using the implicit method. The findings are limited in what they suggest about the two teaching methods but they showed that both methods were effective in teaching these forms. They confirm that priming and satiation effects can

arise in a second language and suggest that activities designed to induce these effects

could provide a way of evaluating particular teaching methods.

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Introduction

1.1 Overview

This thesis considers evidence for the relative effectiveness of two language teaching methods, a 'Grammar Translation Method' and a 'Direct Method', and reports the findings of experimental work carried out in Libya which was designed to test their effectiveness. The two methods considered here share the property of presenting 'positive evidence only' (learners are shown appropriate forms with no reference to 'incorrect' forms). They differ in that the Grammar Translation Method is 'explicit' (as the details of the grammar of the language being learned are explicitly considered) while the Direct Method is 'implicit' (where grammatical details are not explicitly discussed). The Grammar Translation Method is the one currently used to teach English in Libya.

One aim of the study is to find evidence about the effectiveness of the Grammar Translation Method currently used in Libya and to compare it with the Direct Method. A second aim is to consider the possibility of developing technique to assess the robustness of intuitions about a second language and the effectiveness of particular teaching methods, using techniques which aim to give rise to 'syntactic priming' (as discussed by Luka and Barsalou 2005) and syntactic satiation (initially discussed by Snyder 2000). Syntactic priming is a process where individuals are more likely to produce utterances with similar syntactic structures to utterances they have recently seen in writing or heard in speech. Luka and Barsalou (2005) define it as the tendency to repeat structures after repeated exposure. Syntactic satiation is a phenomenon where individuals begin to judge structures which are usually judged unacceptable (and

assumed to be ungrammatical) as acceptable, after previous exposure to the unacceptable structures. Snyder (2000) who defines it as an increase in judgments of acceptability for ungrammatical structures overtime. The investigation explored the assumption that the more robust an individual's knowledge of a language is, the less likely they are to show evidence of syntactic priming or syntactic satiation.

Unlike previous studies which studied these two phenomena with native speakers (discussed in chapter 3), this study focuses on syntactic priming and satiation with second language learners and considers the possibility of using them as diagnostic tools to assess the stability of acquired knowledge of a second language grammar. The study also considers the question of whether syntactic priming and syntactic satiation can happen as a result of exposure to ungrammatical primes or not.

The experimental study was carried out with two groups of learners of English in a Libyan university and with a group of native speakers of English in the UK. The Libyan participants were divided into two groups. One group was taught using the explicit (Grammar Translation) teaching method and the other was taught using the implicit (Direct) method. The responses of the group of native speakers were used as indicators of 'correct' responses on the acceptability judgement tasks.

The experiment focused on two specific structures of English grammar: adverb placement and Yes/No question formation. Each of these has been linked to an assumed verb raising parameter in English (Lardiere, 2006; White 1995). This part of the study aimed to find evidence about whether the two teaching methods with positive evidence only can help in the process of parameter resetting in cases where the first language and the second language have two different values for the same parameter.

Data was gathered using a number of proficiency exams and acceptability judgement tasks (the term 'acceptability' is used for these throughout the thesis, on the

assumption that individuals do not have direct access to the grammar of language they know). Results in the proficiency exams, which are commonly used in educational contexts, were compared with the results of the acceptability judgment tasks. This part of the study aimed to test the reliability of acceptability judgment tasks within second language acquisition research. The presence of syntactic satiation effects could be taken to indicate of the unreliability of acceptability judgment tasks as a source of data in second language acquisition research.

The study found that both teaching methods were effective in developing learners' understanding of the structures focused on here. For Yes/No questions, it found no evidence of priming or satiation or satiation effects for either group. For adverb placement, it found evidence of priming effects for the two groups and this priming of ungrammatical structures led to syntactic effects for the group taught using the implicit method. While the results are inconclusive with regard to the comparative effectiveness of the two teaching methods in general, they do suggest that both methods are capable of helping learners to set or reset the verb raising parameter as required in the acquisition of English. They suggest a difference between Yes/No questions and adverb placement with regard to ease of acquisition. They provide evidence that priming can occur in a second language and that this can lead to syntactic satiation. Finally, they suggest that activities designed to induce syntactic priming and satiation can be used to develop a method for evaluating second language teaching approaches. The next section of this chapter outlines the structure of the rest of the thesis.

1.2 Structure of the thesis

Chapter two discusses the two kinds of teaching methods, explicit and implicit, focused on here, the Universal Grammar framework adopted for the study and assumptions made within this framework about the role of principles and parameters in language

variation and acquisition. It also discusses the nature of acceptability judgment tasks and their role in second language acquisition research.

The discussion of teaching methods outlines general features of the two approaches, some key notions which feature in discussion of the two approaches, and particular features of the two methods used in this study. Using the Grammar Translation method, students 'study grammar deductively' (Larsen-Freeman 1986:11), while in classrooms using the Direct method, grammar is 'derived from the text read' (Stern 1983: 459). These different approaches reflect different assumptions about what is involved in acquiring a second language and these are discussed here. This section also provides some background on the way that English is taught as a foreign language in Libya.

The discussion of the Chomskyan Universal Grammar approach focuses in particular on the notions of principles and parameters, the verb-raising parameter and the process of parameter setting or resetting. It outlines the assumptions made here about the role of Universal Grammar and of an individual's first language in second language acquisition and considers the implications for this study of different assumptions about these.

The last part of this chapter considers the nature of acceptability judgement tasks and their role in second language acquisition research. It considers issues about the use of acceptability judgements in general as well as in gathering data from second language learners. One aim of this study is to use activities designed to give rise to priming and satiation effects as a way of testing the reliability of the acceptability judgements of second language learners.

Chapter three explores ideas about syntactic priming and syntactic satiation. These two phenomena are used in this study as diagnostic tools to test the effectiveness

of the explicit and implicit teaching methods used here and to test the reliability of acceptability tasks as a source of data in second language acquisition research. The chapter presents a number of the previous studies which have captured the attention of a number of researchers in experimental syntax and which have come up with different kinds of results. Previous studies explored syntactic priming and satiation effects mainly for native speakers of English and sometimes for native speakers of other languages, such as Spanish or Chinese. This study explores the two phenomena with regard to the performance of second language learners.

Some previous studies have found evidence syntactic priming effects for ungrammatical structures while other have not, while some studies found a syntactic satiation effect for all sentence types and others did not. The studies also differ with regard to results concerning the relationship between these two phenomena. Some researchers found evidence of syntactic satiation effects as an outcome of syntactic priming while others did not find evidence of this cause and effect relationship. The results presented in this thesis confirm the findings of some of the previous studies (e.g. Snyder 2000) that satiation does not happen to all sentence types. They also follow Luka and Barsalou (2005) in finding evidence for syntactic satiation arising as a result of syntactic priming. However, unlike Luka and Barsalou (2005) and some other studies, this study found a syntactic priming effect for ungrammatical structures.

Chapter four describes the design of the experiment and how it was carried out. It describes the research objectives and underlying assumptions before giving some information about the participants and how they were divided into groups. There were three stages of the experiment: teaching phase, an assessment phase, and a reading phase. In the teaching phase, participants in the two groups were taught the same grammar topics using two different teaching methods (the explicit Grammar Translation method and the implicit Direct method).

In the assessment phase, the participants were tested to measure the improvement that happened as a result of teaching and to compare their performance after exposure to each teaching method. Acceptability judgement tasks were used to elicit the participants' intuitions about the acceptability of certain structures they had been taught. In the reading phase, participants were exposed to a number of ungrammatical structures that had not previously been presented in the classroom (where activities for both groups had involved the presentation of only positive evidence). These ungrammatical structures were presented within a number of reading texts which the participants were asked to read. After reading, they answered a number of questions to test their comprehension of each text.

In the post-experiment stage, participants were tested again for evidence that their performance had been affected by the ungrammatical primes i.e. for evidence of syntactic priming. Another set of acceptability judgement tasks were then used to test whether the previous acceptability judgements had been changed as a result of syntactic priming of ungrammatical structures i.e. to look for evidence of syntactic satiation. The participants then took part in one further set of tests to check the reliability of these results achieved in this post-experiment stage.

Chapter five presents the results from the different stages of the experiment (pre-experiment, after teaching, and after reading). T-tests were used to investigate whether the different results in the different stages reflected a real difference and were not due to chance. These results showed that there was a real difference, and so odds ratio analyses were then carried out to show and describe this difference. These data are then analysed in chapter six.

Chapter seven summarises the conclusions of the study and considers lines of further research. The findings of this study suggest that explicit teaching using the

Grammar Translation method and the implicit teaching using the Direct method (both presenting only positive evidence) can lead to some success in (re)setting the verb raising parameter for English for some participants. The teaching for both groups led to robust knowledge not affected by exposure to ungrammatical primes for Yes/No questions formation. However, this knowledge was affected by ungrammatical adverb placement for the group of participants taught using the implicit method. For these participants, there was evidence of syntactic priming of ungrammatical adverb placements which led to syntactic satiation effects. This conclusion was based on the fact that participants in the implicitly taught group changed their judgments and accepted sentences generally assumed to be ungrammatical which they had rejected earlier in earlier acceptability judgement tasks. There was no evidence that priming of ungrammatical adverb placements led to syntactic satiation with the participants in the explicitly taught group.

The absence of evidence for satiation and priming effects with regard to ungrammatical Yes/No questions for both groups provides evidence that both teaching methods were partially effective in the process of verb-raising parameter (re)setting. The findings also provide evidence to support the possibility of using syntactic priming and syntactic satiation as investigative tools in the field of second language acquisition research based on the assumption that resistance to priming and satiation effects correlates with the robustness of an individual's knowledge of a particular language varieties. The findings accord with Snyder's (2000) findings that syntactic satiation does not occur with all kinds of structures. Contrary to the findings of Luka and Barsalou (2005), they suggest that syntactic priming can be recorded as a result of repeated exposure to some ungrammatical structures. They show that syntactic satiation can occur as a result of syntactic priming in some cases and not in others.

Explicit and Implicit Teaching Methods

This chapter discusses some general properties of explicit and implicit teaching methods and of the two teaching methods explored here. It also discusses the Chomskyan framework adopted for this study and in particular the notions of Universal Grammar and of 'principles' and 'parameters'. It focuses in particular on assumptions about the role of these in second language acquisition. Finally, it considers the nature of acceptability judgments and their role in investigating second language acquisition.

2.1 Explicit and Implicit Grammar Teaching

A number of different kinds of teaching methods are used in second language classrooms and teachers express a range of reasons for choosing particular methods. There has been a vast amount of research on different teaching methods including a recurring focus on the comparative effectiveness of 'explicit' and 'implicit' methods (Dekeyser 2003, Ellis 2008, Erlam 2006). This thesis focuses on this distinction by considering the effectiveness of two methods which differ with regard to this, one of which is the explicit method used to teach English in Libyan universities. Each method shares the property that it focuses on 'positive evidence only'. This means that the two methods considered here show students 'correct' forms (assumed to be grammatical' and do not explicitly tell students to avoid particular 'incorrect' forms (assumed to be ungrammatical). This section outlines differences between explicit and implicit teaching methods, including underlying assumptions about what is involved in second language learning and ways in which they are assumed to facilitate learning.

The key differences between explicit and implicit learning, and between explicit and implicit teaching methods, lie in whether or not the learner is aware of what they are learning or not. Ellis, N. (1994) provides a useful overview of the two types of learning and of debates about these with regard to both first and second language acquisition. He mentions a few non-linguistic examples of each type of learning (walking is one thing we learn implicitly, while learning how to play chess has to be done explicitly) and gives a clear brief account of what has been assumed to be implicit learning in first language acquisition. He says:

> We acquire our first language (L1) by engaging in natural meaningful communication. From this 'evidence' and our innate capabilities of analysis, we automatically acquire complex knowledge of the syntactic and morphological structure of our language. Yet paradoxically we cannot describe this knowledge, the discovery of which forms the object of the entire discipline of theoretical linguistics. This is a difference between explicit and implicit knowledge-ask a young child how to form a plural and she says she does not know, ask her ''here is a wug, here is another wug, what have you got?'' and she is able to reply, ''two wugs''. (Ellis,N. 1994:2)

Ellis, N. goes on to summarise key debates about how we acquire such knowledge of a first language, the extent to which second language acquisition is similar or different, and how best to teach second languages. Briefly mentioning debates about whether we should teach second languages explicitly or implicitly, he suggests that 'pendulum swings' between the two make clear that it is not easy to resolve this debate. Naturally, the debate revolves around questions about how a second language is acquired and the mechanisms and the stages of seconds language learning

process. The rest of this section considers a number of key notions which have been discussed within these debates.

These arguments that there are two kinds of knowledge that a learner may have of a second language dates back to Krashen's distinction (1987) 'between language learning (explicit) and language acquisition (implicit) [which] treats language learning as a conscious process, [while it treats] acquisition as more subconscious' (Stern 1983: 404). This point of view considers Krashen's distinction between acquiring a language unconsciously without intended effort and between conscious and planned language learning as the origin of distinguishing two kinds of L2 learning in second language acquisition research (Erlam, 2006: 465).

Stern (1983: 410) explains that the choice between explicit and/or implicit options is one of the main problems that appear during the language learning process. He explains that there is a debate in this field in choosing 'whether the learner should treat the language task intellectually and systematically (explicitly), or whether he/she should avoid thinking about the language and absorb the language more intuitively (implicitly)' (Stern, 1983: 403). This debate about which kind of teaching is better than the other needs to put into consideration a number of factors that may help a language teacher in choosing one of these two options.

One of the important factors that may help in choosing either explicit or implicit teaching is considering the individual differences between language learners which determines the appropriate method that can help every leaner to absorb the second language. In addition, the purpose of second language learning can be one of the factors that can determine the appropriate teaching method which can lead the teacher and the learner to achieve that purpose. It may also be claimed that the similarities and differences between the first and the second language can be put among the important

factors that can determine which teaching method can help the second language learners to acquire the different or the similar grammar of the second language.

Dekeyser (2003: 314) describes 'awareness' as 'the defining feature used in the second language literature on implicit and explicit learning'. He defines an implicit learning style as learning without awareness of what is being taught while explicit learning happens when students are taught grammar rules consciously. Ellis (2008: 120) explains that 'explicit methods were motivated by the belief that perception and awareness of L2 rules necessarily precedes their use'. This means that the learner's awareness of what is being learned is the key feature of this distinction. In Grammar Translation method used in this study, learners were aware of the L2 grammar rules taught, while with the Direct method, there was no attempt to make learners aware of what they are learning about these constructions.

In this field of research, the L2 language data encountered by second language learners, either explicitly or implicitly, are described as 'input'. Sharwood Smith (1993: 167) defines input as 'the potentially processable language data which are made available by chance or by design to the language learner'. This input changes into 'intake' once it is acquired by the second language learner. 'Intake is a subset of the detected input (comprehended or not) held in short-term memory, from which connections with long-term memory are potentially created or strengthened' (Reinders, 2012: 28). Macis (2011: 350) explains that 'nativists such as Krashen (1981, 1985, 1987) assume that natural internal mechanisms operate upon comprehensible input which leads to language competence'. This is known in literature as the 'Input Hypothesis' coined out by Krashen. According to this hypothesis, 'SLA learners acquire a target language if they are exposed to a kind of input' (Macis, 2011: 350). This point of view is also mentioned by Mitchell & Myles (1998: 14) who explain that there is a strong view in second language acquisition research that 'language input of

some kind is essential for normal language learning'. Furthermore, Mitchell and Myles explain that 'during the late 1970s and early 1980s, the view that was argued by Stephen Krashen and others that input (at the right level of difficulty), was all that was necessary for L2 acquisition to take place' (1998: 14).

Another focus of discussion has been on how input that feeds into the learning process and relates to 'intake'. Ito (2001: 101-102) illustrates that there has been some confusion about the definition of intake and that most of these views can be divided into two views: intake as product and intake as process. 'In the product view, intake is input that is unprocessed language, while in the process view, it is a part of the learner's interlanguage system and is thus processed language'. Reinders (2012: 24) adds another category, suggesting that 'definitions of intake come into three broad categories: those that see intake as a product, those that see it as a process, and those that see it as a combination of the two'. Some researchers, he suggests, assume that 'intake can be seen as both a product and a process'

Another key notion, discussed by Sharwood Smith (1991) is 'Input Enhancement'. This term 'refers to the deliberate manipulation of L2 input with the intention of making certain features more perceptually salient than others' (Macis, 2011: 350). Macis explains that this is done by 'highlighting the L2 target form either typographically or intonationally' and with the hope of 'implicitly or explicitly making L2 learners notice targeted L2 forms and consequently increase the rate at which they acquire those forms' (Macis, 2011: 350).

Discussions have also focused on the degrees of attention that can be paid to L2 input in order to lead to intake. Mitchell and Myles (1998: 138) point out that 'according to Krashen's Input Hypothesis, it was sufficient for the learner to pay attention to the meaning embedded in comprehensible input, for the acquisition of

language forms to take place'. However, 'researchers such as Sharwood Smith (1981, 1993), Schmidt (1990, 1994) and others argued that learners need to pay some degree of attention to language forms if acquisition is to take place'. (Mitchell and Myles 1998: 138).

Schmidt's (1990) suggestion that L2 learners can achieve intake of L2 grammar as a result of paying conscious attention to the L2 input is known as 'Noticing Hypothesis'. Schmidt (2010: 721) suggests that this hypothesis was built on the assumption that 'input does not become intake for language learning unless it is noticed, that is, consciously registered (Schmidt 1990, 2001)'. This goes against Krashen's view in assuming that noticing is a necessary condition for learning and that only what learners notice in the input becomes intake. This then raises the question of how to make L2 learners notice these target forms.

Mueller (2010: 82) discusses the idea of using explicit instruction as a trigger for noticing. This assumption refers to the possibility that explicit teaching can raise the learner's attention to any specific linguistic forms. He says that 'a possible benefit of explicit teaching may be its ability to trigger the incidental noticing of form-meaning connections within subsequent input'. This means that 'learners may have a natural predilection to devote more processing resources to novel semantic and syntactic patterns that have recently been overtly targeted in instruction'. Mueller carried out two experiments in order to explore the idea that 'if explicit instruction triggers noticing, an important question is whether explicit instruction that is thought to produce deeper levels of processing, also promotes more incidents of noticing' (2010: 92). This result suggests that 'explicit instruction, in addition to any immediate effects, may have important lingering effects by altering learner's sensitivity to important semantic mappings within the input' (Mueller, 2010: 96). In other words, the results show that 'explicit instruction facilitates incidental noticing'.

Zhang (2012: 580-583) refers to a range of research which advocates the role of noticing in the process of second language learning, suggesting that 'researchers who have supported the role of awareness or noticing mainly come from the field of cognitive psychology'. Approaches which support or adopt the noticing hypothesis in some form include the consensus framework of the cognitive Process in SLA, output hypothesis, the interaction hypothesis and attention-processing model (Zhang, 2012: 580-583).

On the other hand, Zhang also mentions work which denies any effective role of noticing in second language acquisition, pointing out that 'researchers who see no role for consciousness in language acquisition generally argue that the acquisition of language is qualitatively different from other kinds of learning'. These researchers, he suggests, 'have tended to draw more heavily on linguistic theory, particularly UG, than on theories from cognitive psychology' (2012: 580). Theories which assume that second language acquisition occurs without consciousness, 'generally draw a clear distinction between acquisition and learning and claim that the acquisition of linguistic competence occurs in the absence of awareness' (Zhang, 2012: 580).

A second language teacher can direct the learners' attention to form either explicitly or implicitly. This depends on how language input is presented in the second language classroom. There is a debate in the field of second language acquisition about the role of 'focus on form' and 'focus on forms' in second language classroom. Focus on form was first proposed by Long in 1998 and refers to the idea of drawing L2 learners' attention to language features that they are already able to use. He defines focus on form as drawing ' students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus on meaning or communication' (Long, 1991: 45-46). This means that focus on forms is about shedding light on certain language features to be noticed by the L2 learner.

On the other hand, 'focus on forms' refers to the explicit focus on language features in the classroom when 'the teacher is equated with the traditional teaching of discrete points of grammar in separate lessons' (Sheen, 2002: 303). The two options are theoretically different as explained by Sheen (2002: 303) who says that ''Focus on form' derives from an assumed degree of similarity between first and second language acquisition positing that the two processes are both based on exposure to comprehensible input arising from natural interaction ....Focus on formS' , on the other hand, is based on the assumption that classroom [teaching of] foreign or second language derives from general cognitive processes'

Rebuschat (2009: v) carried out a number of experiments to explore 'how humans acquire syntactic knowledge without intending to and without awareness of what they have learned'. He also aimed to investigate 'what role awareness plays in the acquisition process' (p. 156). The findings of these experiments agree with Zhang's (2012) view in that second language learning can occur in the absence of awareness. Rebuschat (2009: 156) concludes that 'adult learners are able to acquire syntactic structures of a novel language under both incidental and intentional learning conditions'. However, it seems that empirical research has not clarified the role of noticing in second language acquisition.

Explicit learning is normally associated with form-focused instructions in the classroom. This choice is based on learning the target language 'by memorizing explicit rules about the language' (Braidi, 1999:4). There have been some arguments against the usefulness of this kind of teaching in second language classroom which is the reason behind conducting this experimental study to evaluate the usefulness of this kind of teaching. Stokes (1975: 7) presents one of these arguments against the usefulness of explicit teaching by denying any effect of this kind of teaching when saying that 'grammatical description is often regarded as irrelevant to the teaching of English as a

foreign language'. This assumption is explained by mentioning that these explicit descriptions of the second language grammar can only be valuable when teachers systematically relate structure to use. The reason behind this argument is that teaching only grammatical structures normally fails to build a connection with language use.

Dekeyser (2003: 327) has a similar point of view when referring to 'the gap between explicit knowledge and use' as a problem connected with explicit teaching that is based on presenting the target language as a series of grammar rules. The previous arguments are based on the assumption that explicit teaching is not effective in teaching the second language as it is not connected to teaching how to use this language in the typical explicit teaching classrooms. Similarly, Erlam (2006: 465) presents another argument doubting the usefulness of explicit teaching in building the linguistic competence of the second language by explaining that 'it is implicit rather than explicit knowledge that linguistic competence is composed of'. Another point of view seems similar to this argument as it supposes that 'explicit and conscious knowledge of grammar is relevant to learning only and could never contribute anything to the acquisition of the second language' (Mashy 1991: 303). This latter argument doubts the effect of this kind of teaching in building a robust knowledge of the target language.

Krashen (1987: 19) makes a connection between the previous two arguments against the usefulness of explicit teaching in his 'Monitor Hypothesis' which is based on the idea that learners rely on explicit knowledge and specifically conscious representation of the rules of L2 grammar to monitor, edit and correct second language acquired system. In this hypothesis, Krashen doubts the usefulness of explicit teaching in second language classroom. He explains this assumption by illustrating that explicit knowledge (built as a result of explicit grammar teaching) may lead L2 learners to check their output constantly with their conscious knowledge of the second language grammar rules. For example, 'in spoken communication, the Monitor would tend to

interfere with fluency. Some language learners overuse the Monitor and become inhibited' (Stern 1983: 404). In general, this phenomenon results in and it is at the same time a result of 'a good deal of mismatch between their [L2 learners'] presumed knowledge and their use of that knowledge in performance' (Gregg 1996: 53).

Other researchers defend the role of explicit teaching of L2 grammar in leading to good L2 knowledge. Nicholas (1991: 78), for example, insists on the idea that 'increased conscious reflection on language by students and teachers leads to improved language use and better overall education'. Hudson (1999: 109) argues for the usefulness of explicit teaching in leading to good performance in the second language. He mentions a number of arguments for the usefulness of explicit teaching of second language grammar by illustrating that it helps to increase self-awareness which develops analytical thought patterns or scientific thinking. Vickers and Ene (2006) have a similar point of view as they refer to the idea that explicit teaching seems to be effective in terms of gain in grammatical accuracy.

Hedge (2000:151) refers to other advantages of explicit grammar teaching when she explains that grammatical instructions and practice may have a role in helping second language learners to 'refine their interlanguage and achieve greater accuracy'. Moreover, she explains that there is a degree of agreement among researchers that 'focus on grammar and the explicit learning of rules can facilitate and speed up the grammar acquisition process'. However, she also refers to the notion of the 'degrees of explicitness' when explaining that explicit instructions seem to be helpful in the case of linguistically simple rules, but they do not seem to help in areas where the relationship between structure and function is not so clear as with the use of the articles for learners of English as a second language.

Dekeyser (2003: 331) expresses a similar point of view, suggesting that there are 'different degrees of usefulness of explicit teaching for different levels of difficulty', but disagreeing with Hedge (2000) who refers to the usefulness of explicit instructions when teaching simple rules. This is because unlike Hedge, Dekeyser believes in the usefulness of this kind of teaching in areas of difficulty in the target language. Those areas of difficulty according to him are areas of abstractness illustrating that it is necessary to focus on form to make learners aware of the abstract patterns that cannot be easily learned implicitly. He suggests that 'cognitive psychologists have not been able to provide convincing evidence that people can learn abstract patterns without being aware of them' (Dekeyser 2003: 335). This argument supports his assumption that explicit teaching is useful in areas of abstractness in the target language.

MacWhinney (1997: 278), arguing for the importance of employing the two methods in the language teaching process, suggests that implicit and explicit teaching are closely connected. He says that 'providing learners with explicit instruction along with standard implicit exposure would be a no-lose proposition... there is nothing in the implicit learning literature that says that explicit instruction cannot further modulate implicit learning'. He adds that 'the attempt to attribute language learning to either implicit or explicit processes will inevitably have to be answered by a position that emphasizes the contribution of both sets of processes'(p.279).

While some researchers deny the usefulness of explicit teaching of the second language grammar and others think that this kind of teaching is very useful, there are also a number of researchers who suggest that this kind of teaching is useful in some cases. Some think it is useful for teaching certain aspects of a second language. Others argue that explicit teaching is useful in certain stages of the second language teaching process but not in others. Mumford (2008), for example, argues that items or structures

should be taught explicitly and in isolation only in the early stages of the learning process and that they are not so useful in the later stages.

Another view could be that the purpose of learning a second language can be a factor in determining which teaching method is appropriate. Implicit teaching seems to be more useful when the second language is taught to be used in. Stern (1983: 459) mentions a number of advantages of the Direct method, which is an implicit method as mentioned before, and one of these advantages is the connection with language use. He says that the use of this implicit method was 'a first attempt to make the language *learning* situation one of language *use*'.

Another criterion that may lead a language teacher to decide whether to teach L2 grammar explicitly or implicitly is the learners' individual differences or as described by Stern (1983: 309) 'characteristics of the learner and individual differences among learners'. Stern suggests a number of L2 learner's characteristics which can be important factors affecting second language learning processes, including: '(1) the influence of age and maturity on mental development and learning, (2) the effects of heredity and environment on abilities and achievement; (3) specific aptitudes for particular learning tasks...and (4) the influence of home and community on motivation'.

The argument about the learners' individual differences and characteristics leads to another concern which may lead a second language teacher to choose a particular kind of method. This is the concern about the level of the difficulty of the L2 grammar that is being taught. As was pointed out earlier, there is an argument in this field that each of these two teaching styles can be used together in certain stages of the teaching process as explained by Hedge (2000), Dekeyser (2003), and Mumford (2008). It may be a good option for the second language teachers to use explicit teaching in the early stages of L2 grammar teaching until students are familiar with

them and then teachers can move to teach these rules implicitly through spoken dialogues or written texts.

This point of view is based on the assumption that sometimes second language learners seem unable to get knowledge of the L2 grammar without having detailed grammatical knowledge of the second language. At times, an explicit approach is more suitable with complex rules while an implicit approach is more effective with less complicated rules. As a result, it is the second language teacher's role to decide which kind of teaching and what language teaching strategies and resources to use depending on the learners' preferences and needs on one hand, and depending on the level of the difficulty of particular areas in second language grammar on the other.

The criterion of L2 grammar difficulty is a very complicated issue. It was mentioned previously that it depends on the learners' abilities and interests which makes a grammar rule a difficult task for one L2 learner, but not so difficult for another L2 learner in the same second language learning environment. In addition to this aspect, the similarity between the L2 learners' first language and the target language grammar seems to be an issue here. L2 grammar rules may not be complicated for an L2 learner who is familiar with a similar rule in his/her first language. The assumption here is that explicit teaching can be more effective in circumstances where there are no similarities between the first language grammar and the second language grammar. Exposure to the target language is also an issue. Explicit teaching with much explanation seems to be needed where there is no previous exposure to the second language grammar.

English is taught as a foreign language in Libya where people speak Arabic as their first language. The case in Libya represents a good example of the last two issues that has just been mentioned about which teaching method can be better in

circumstances where the first and the second languages are different and in cases where there is no exposure to the target language except in the formal classroom. Explicit teaching is the most widely used approach of teaching English there for a number of reasons that were mentioned previously. Libyan learners who are taught English as a second language usually have no exposure to English except in the formal language classrooms. In addition, the fact that English and Arabic are very different languages leads to the fact that those learners need to be taught English grammar rules explicitly as they are not similar to the grammar rules of Arabic.

Mohamed (2014: 32) says that teaching English as a foreign language in Libya 'has gone through different times ranging from prosperity in the 1960s and 1970s to stagnation and deterioration in the 1980s and 1990s'. He explains that the stagnation which was for political reasons, and that in the late 1990s, 'the teaching of English as a foreign language started to flourish again'. After that 'in 2005, English was recognised as the official second language of Libya' (Najeeb 2013: 1245). Nowadays 'teaching English as a foreign language in Libya has become one of the necessities of everyday life' (Youssef 2012: 368). English is taught at different teaching levels, 'as a foreign language in post-secondary and higher education including schools, colleges and universities' (Youssef 2012: 368). Najeeb summarizes effects of the stagnation period in the 1980s and early 1990s during which teaching English was eliminated in Libya by saying that 'a Government decision in the late 1980s eliminating English meant that a whole generation grew up with no exposure to this language' (Najeeb 2013: 1245).

The teaching method that is normally used in teaching English in Libya is the Grammar Translation method, despite the fact that it is not the officially adopted method that is supposed to be used in Libya. As Najeeb (2013: 1248) points out, 'in the 1980s, the Grammar Translation method was used to English in schools of Libya'. However, after the reintroduction of English in the 1990s, the new English language

syllabus was based on communicative language teaching (CLT). However, 'though officially Libya has made the switch to the more relevant CLT, the Grammar-Translation is still used' (Najeeb 2013: 1248).

This idea that the explicit Grammar-Translation method is still used in spite of the official shift to the implicit communicative language teaching is also mentioned by Emhamed and Krishnan (2011). They mention that 'in the 1980s, the Grammar-Translation method was used to teach English in schools in Libya...Since the year 2000, the new English language syllabus based on the communicative language teaching (CLT) approach has been introduced...However, until today the Grammar-Translation method is still used' (Emhamed and Krishnan 2011: 123). This use of the Grammar-Translation method is also mentioned by Elabbar (2014: 74) who says that 'the Libyan teachers of English had been accustomed to using old methodologies'. In the findings of his research study on the performance of the Libyan teachers of English, he says that 'it has been noticed that most teachers are using the Grammar-Translation method, drilling and observing their students according to their memory' (Elabbar 2014: 79).

The use of the Grammar Translation method is considered as sign of the idea that the status of English language teaching is not developed in the country. Omar (2013: 27) argues that 'although the Libyan community appreciate English language and its importance for wider communication and future prosperity in the country, it is still not supported or developed in terms of methodologies and courses'. He explains that 'the Libyan teachers and learners believe that language is nothing more than grammatical forms to be mastered and memorised' (Omar 2013: 34). This is based on the fact that in the Grammar Translation method, language is taught explicitly as a series of grammar rules, neglecting the connection between form and function (Larsen-Freeman 1986).

The way that English is taught in Libya with the use of Grammar Translation method is explained by Emhamed and Krishnan (2011: 125) who say that 'in the classroom, the instructor stands in front of students in using the Grammar-Translation method to teach students directly from textbooks'. They add, 'the instructor uses Arabic (the official language) to explain grammar and the meaning of EFL texts, and the students are asked to translate English sentences into Arabic, or *vice versa*'. This fact that Arabic is used in EFL classroom in Libya is also mentioned by Omar (2013:27) who says that 'in the Libyan EFL context, English is not the medium of instruction at schools nor is it used outside the classroom'.

This role of the first language in the second language classroom is one of the principles of Grammar Translation method which is the reason that in EFL classrooms in Libya 'the medium of instruction is their first language, Arabic' (Omar 2013: 28). This use of the first language in giving instruction in the second language classroom is evaluated as playing a negative role in the second language learning process and sometimes as an obstacle. This might be because of the idea that was mentioned earlier about the difference between the first and the second language in this case. Youssef (2012: 369) refers to the dominance of Arabic in the Libyan society as affecting the teaching of English as a foreign language in this country. He says that 'Libya is one such a country where Arabic is well developed and has been used for a long time in the country. Thus introducing English as a foreign language is subject to resistance in terms of poor motivation'.

Rajendran (2010: 63) refers also to the effect of the difference between the first language, Arabic and English on the process of teaching English as a foreign language in Libyan universities. He says 'not only are the students first generation learners but they have also been affected by the pull of their mother tongue and special writing style'. Rajendran (2010) agrees with voices which say that in addition to the difference

between the two languages, the lack of exposure to the target language can also play a negative role in this case. He says that teaching English in the Libyan universities is a Herculean task. Except in the language class, students find no opportunity to learn or use English anywhere...invariably Arabic is used everywhere'. He adds: 'The complete lack of exposure to English of the students makes even more the task difficult to the teacher. Students seem to have no idea of proper sentence structure in English. They do not know the correct spellings and grammatical rules' (Rajendran 2010: 64).

Youssef (2012: 368) agrees with this idea which considers the use of Arabic and the lack of exposure to English as among the reasons behind the fact that Libyan students have difficulties in learning English in Libya. He says that such difficulties 'may be related to different causes such as the reading materials presented, economic reasons, teaching methods and techniques, an Arabic speaking environment and unfamiliar linguistic features'. It can be noticed that he considers the teaching methods and techniques as factors that may affect the way that English is taught as a foreign language in Libya.

This argument about the effect of the used teaching methods on teaching English as a second language in Libya is the reason that this study was conducted. One of its main aims is to evaluate the usefulness of explicit teaching of the second language grammar in Libya where English is normally taught explicitly according to the principles of the Grammar Translation method. This evaluation was planned to be achieved by making a comparison between the results of a group of Libyan L2 learners who were taught explicitly and the results of another group of participants who were taught implicitly. In other words, this study involves a comparison between explicit and implicit teaching of second language grammar to see which kind of teaching can lead to better results in the Libyan EFL context.

This comparison is based on investigating which L2 teaching approach, the explicit or the implicit, will help to build more stable, knowledge of the second language grammar. This investigation also involves a focus on how these teaching approaches, both involving positive evidence only, helps in parameter (re)setting process from L1 value to a different L2 value with regard to specific constructions. Such comparison aims to test the previous assumptions about the better effect of explicit teaching in cases where the first and the second language have different parameter values as the case with Arabic and English in this study. Another important aspect of this comparison is that it focuses on a situation where learners have exposure to the target language only or primarily in the formal language classroom.

The previous argument about considering second language learning as a parameter (re)setting process sheds light on the role of the first language on second language learning. There has been a wide debate in the field of second language acquisition research about the role of L1 on the way that adult L2 learners learn the target language. The influence that one language can have on the learning process of another language is commonly known as 'language transfer'. Odlin (1989:27) defines 'transfer' as 'the influence resulting from similarities and differences between the target language and any other language that has been previously acquired'. If this influence comes as a result of the L2 learner's mother tongue, it is known as 'L1 transfer'. Ellis (1997: 51) explains that 'L1 transfer refers to the influence that the learner's L1 exerts over the acquisition of an L2'.

This influence of the learner's first language can be 'negative transfer' in cases when 'the learner's L1 is one of the sources of errors in learner language'. 'However, in some cases, the learner's L1 can facilitate L2 acquisition ...this type of effect is known as positive transfer' (Ellis 1997: 51). This phenomenon of language transfer is described by Selinker (1992: 208) as 'a cover term for a whole class of behaviours'. He

explains that this term refers to 'the influence and use of prior linguistic knowledge, usually but not exclusively NL knowledge'. L1 transfer happens when 'the habits of the L1 were supposed to prevent the learner from learning the habits of the L2' (Ellis 1997: 52).

This negative role of the first language on second language acquisition happens in cases where there are differences between the native language of the learner and the target language. Ellis (1997: 52) explains that 'that interference, and thereby learning difficulty, could be predicted identifying those areas of the target language that were different from the learner's L1'. This is a behaviourist view of second language learning according to which 'the language learner, like any other learner was thought to build up habits- old habits interfering with the acquisition of new ones' (McLaughlin and Zemblidge 1992: 63).

This behaviourist view of the role of L1 transfer in second language learning 'fell out of favour in the early 1970s' as mentioned by Ellis (1997: 52). The main objections to this negative view of L1 transfer on second language learning is the idea that differences between the target language and the native language do not always result in learning difficulties. Ellis (1997: 52-53) explains that 'one of the main objections to a behaviourist account of L1 transfer is that transfer errors do not always occur where they are predicted to occur'. The same point is raised by (McLaughlin and Zemblidge 1992: 74) while describing the mechanisms of L1 transfer. They illustrate that ' from a cognitive perspective, transfer occurs because the speaker has incorrectly activated an automatic routine based on the first language...but such an account says little about why certain linguistic forms transfer and other do not'.

As a result of such views against the role of L1 transfer, Ellis (1997: 52) says that 'some theorists espousing strong mentalist accounts of L2 acquisition sought to

play down the role of L1' and that was a result of the argument that few errors were the result of L1 transfer. (McLaughlin and Zemblidge 1992: 63) say that there was 'increasing evidence, however, that led some researchers to conclude that transfer from the first language played a minor role in second language acquisition'. As illustrated by Ellis (1997:53), cognitive theories of SLA 'recognise that transfer will occur under some conditions but not under others... SLA has succeeded in identifying some of the cognitive constraints that govern the transfer of L1 knowledge'.

As a result, according to Ellis, the following development was 'to reconceptualise transfer within a cognitive framework' (1997: 52). He explains that this was begun by Selinker who 'in his formulation of interlanguage theory, he identified language transfer as one of mental processes responsible for fossilization'. Selinker (1992: 207) explains the role of language transfer in creating interlanguage by arguing that this use of information from L1 in the formation structure of interlanguage is 'a selection process i.e. there are some NL structures and processes more likely to be transferred than others'.

Universal grammar theory (Chomsky 1965) offers 'interesting predictions about what learners will acquire first and what they will transfer from their L1' (Ellis1997: 71). In addition, 'UG also serves as a source of tuned hypotheses about what structures will cause learning difficulty'. (McLaughlin and Zemblidge 1992: 65) refer to the idea that 'the interlanguage of the language learner is taught to be constrained by universal grammar' which demote to an important role of universal grammar in this debate about the nature of second language acquisition.

The connection between universal grammar theory and second language acquisition is mentioned by Mitchell and Myles (1998: 69) who say that universal grammar 'is not primarily a theory of second language learning....it is a theory of

language which aims to describe and explain human language'. Therefore, this theory is 'only indirectly relevant to second language acquisition research'. However, they mention a number of advantages of universal grammar approach in this field in spite of the fact that 'there is still little doubt that UG approach to research into second language acquisition' (Mitchell and Myles 1998: 70-71).

They say that the advantages of universal grammar into second language acquisition research can be noticed in two areas. First, this approach is very useful 'in describing not only the language produced by learners, but also the language to be acquired as well as the first language of the learner' (Mitchell and Myles 1998: 70-71). There is another advantage of this approach which is the fact that it has provided some explanations to a number of factors associated with second language acquisition. 'UG' has also enabled L2 researchers to draw up a principled view of language transfer, cross-linguistic influence, in terms of principles and parameters' (Mitchell and Myles 1998: 70-71).

The previous arguments lead to an inquiry about the start point from which an L2 leaner starts getting the target language. Corder (1977) talks about the 'initial hypothesis' which he describes as a basic system from which second language learning process starts. He describes this system as consisting of lexical items and a few simple rules for sequencing them. Ellis (1994: 353) refers to this hypothesis as 'controversial' as he wonders whether 'as Coder suggests, the starting point is the same as in L1 acquisition ...then the question arises as to whether this starting point is some remembered early version of L1 ...or whether it is the innate knowledge of language which all children bring to the task of learning L1, as proposed by Chomsky (1965)'.

This debate about the nature of the 'initial state' of second language acquisition is also raised by Grüter et al (2008: 47) who wonder whether 'at the initial state of L2

acquisition, the learner draws on grammar that has been transferred in its entirely from L1... [or at] the initial state L2 learner draws on knowledge provided by UG directly'. Grüter et al (2008: 47) carry out an experimental study to test two hypotheses '(i) at the initial state of L2 acquisition, the learner draws on grammar that has been transferred in its entirely from the L1, and (ii), the initial state L2 learner draws on knowledge provided by UG directly, without 'detour' via the L1'. They refer to the first hypothesis as 'Full Transfer'. Their results 'strongly support the full transfer model' and this is explained by them by saying that if 'the L2 grammar shows properties of the L1 grammar that are inconsistent with the L2 grammar; this is taken as evidence of the Full Transfer hypothesis of the initial state' (p.54).

Ellis (1997: 89) says that 'there is no single metaphor that can compass all the metaphors that SLA has drawn to explain how learners acquire an L2' which replies to this debate about the nature of the process of second language learning and the factors that affect such process. He says that 'UG does not claim to account for the whole of a language or even the whole of the grammar of a language'. He describes the role of universal grammar in this field by illustrating that 'UG allows the existence of different components of language that are learned in different ways, some through UG and others with assistance of general cognitive abilities'.

2.1.1. Grammar Translation Method and the Direct Method

The experiment that is carried out in this study included a comparison between an explicit teaching method and an implicit teaching method. The explicit method is the Grammar Translation method that is widely used in teaching English as a second language in Libya as was explained above. This method is used with one group of the participants who are included in this study. The other method is the Direct method which is an implicit method used with the participants in another group. This study

aims to make a comparison between the results achieved by using each teaching method to evaluate which method led to the best results in this context.

Explicit grammar teaching is one of the basic principles of the Grammar Translation method (Larsen-Freeman 1986; Richards and Rodgers 1986). In a language classroom that employs this method, 'students study grammar deductively; that is, they are given the grammar rules and examples, are told to memorize them, and then are asked to apply the rules to other examples' (Larsen-Freeman 1986: 11-12). It has been argued that these principles of grammar teaching used in Grammar Translation method classrooms focus on form while neglecting the connection between form and function while emphasizing the grammatical accuracy. The stress on the memorization of the second language grammar rules in this method often results in what Richards and Rodgers (1986: 4) suggest, makes second language learning 'a tedious experience of memorizing endless lists of unusable grammar rules and vocabulary'.

It can be said that the typical environment in which explicit grammar teaching occurs is second language classrooms that follow the principles of the traditional Grammar Translation method which is based on explaining grammar of the language. As mentioned earlier, English is normally taught as a second language in Libya explicitly according to the principles of Grammar Translation method. Stern (1986:454) explains that the second language classroom that uses this method, which is the case with the target group of subjects in this study, presents language in short grammar lessons. He argues that these 'grammatical features that are focused upon in the course book and by the teacher in his lessons are not disguised or hidden' (ibid: 454) and the learner is expected to study and memorise these rules.

A number of researchers refer to the fact that this method is based on principles that insist on explicit teaching of the second language grammar without paying

attention to teaching how to use such forms. Macaro (2003: 37) explains that the goal of second language teaching is leading the second language learners towards a kind of communicative competence. He explains that, when communicating in the target language, second language learners 'demonstrate grammatical competence by showing strong evidence, through performance, of having internalized the rules and patterns of the target language'. He also explains that 'it is unlikely that the traditional grammar-translation method would provide the kind of input that would lead to communicative competence'.

This teaching method was used with one group (group 1) of the university level Libyan students who participated in this study. They were taught in a way that 'emphasizes the teaching of the second language [English] grammar' with 'little or no emphasis on the speaking of the second language or listening to second language speech' (Stern 1983: 454). Those students were taught in Libya which means that the teaching process took place in their first language environment where there was no (or very little) exposure to the second language except through explicit instruction in the formal classroom. As was also mentioned above, this study aims to investigate the usefulness of using this method in building stable knowledge of second language grammar. The stability of this knowledge is measured by testing whether it is resistant to change as a result of tasks designed to lead to syntactic priming of ungrammatical structures and also to syntactic satiation.

In other teaching methods, there is no such emphasis on explicit knowledge of the second language grammar. One of these methods is the Direct Method which 'is characterised, above all, by the use of the target language as a means of instruction and communication in the language classroom' (Stern 1983: 456). Stern points out that the standard procedure that is followed in this method is based on presenting a 'text' which is 'usually a short specially constructed foreign language narrative in the text book' by

the teacher. The teacher uses the target language in explaining the text. With this method, second language grammar is 'derived from the text read and students are encouraged to discover for themselves the grammatical principle involved' (ibid: 459).

As mentioned above, another group of subjects in this study ('Group 2') was taught the same aspects of grammar using a different, implicit, method, namely the Direct Method. This was chosen because it is significantly different from the traditional Grammar Translation method. In fact, the Direct Method was developed in the field of second language acquisition as a response to perceived problems with the Grammar Translation method (Larsen-Freeman 1986 & Richards and Rodgers 1986).

It was mentioned before that this second group was included in the study so that a comparison could be made between the performances of the first group which is taught explicitly, and the performance of this group that is taught implicitly. This comparison was supposed to help in evaluating the explicit way of teaching that is still followed in Libya by investigating whether the results of the subjects who were taught according to this explicit way of teaching would be better than the results of the implicitly taught Group 2 or not.

The comparison also involves investigating which method, the explicit or the implicit, will help in building a stable knowledge of the taught second language grammar. The stability of the acquired knowledge will be tested during the experimental phase of this study by testing the grammaticality intuitions of the subjects as a result of the teaching process. These intuitions will be elicited with the use of acceptability judgement tasks and they will be tested to see whether they are changeable or stable to give an insight on the stability of the underlined grammatical knowledge of the second language.

2.1.2 Teaching through positive evidence only

Gass and Selinker (1994: 123) point out that there are two kinds of evidence available to second language learners as they make hypotheses about correct and incorrect language forms: positive evidence and negative evidence. Long (1996: 413) explains this idea by saying that in general, the linguistic environment for second language acquisition can be thought of ' in terms of the positive and negative evidence [which] speakers and writers provide learners about the target language' (Long 1996: 413). In this field, positive evidence refers to 'what is grammatical and acceptable (not necessarily the same) in the L2'. On the other hand, negative evidence refers to 'what is ungrammatical'.

There has been a debate in the field of second language acquisition on whether presenting both types of evidence is necessary or not. The need for negative evidence in second language acquisition has been a source of conflict between theoretical positions in the field of second language acquisition research. Schwartz & Gubala-Ryzak (1992) claim that negative evidence is not essential in parameter resetting processes, as positive L2 input is enough to show that the L1 value is incorrect. They explain their point of view by saying that the negative evidence is too explicit to build unconscious parameter mechanisms. They also take the view that negative evidence is unnecessary in the parameter resetting process depending on the idea that L2 positive evidence input is enough to show the L2 properties of certain parameters.

Gass (1996: 339) takes a similar point of view when she explains that the issue of positive evidence is 'central because learners construct grammars on the basis of the input (the positive evidence to which the learner is exposed)'. She adds that positive evidence only is enough where the two languages (the first and the second language) are similar in that they have the same parameter settings. However, she also thinks that

there are cases when 'positive evidence will not suffice to provide learners with sufficient information about L2' (ibid: 339).

This study is interested in exploring this area by presenting positive evidence only in the teaching part of the experiment to see whether it is enough to help learners to reset the verb raising parameter (see sections 2.2.1 and 2.2.2) from their first language, Arabic, to its property in English. It tested the hypothesis that presenting positive evidence only would not be enough to help learners in the parameter resetting process in this case because, as mentioned by Gass (1996), positive evidence only is enough when the first and the second language are similar and have the same parameter setting. Arabic is a verb raising language while English verbs do not raise which means that the first and the second languages do not have the same parameter settings. For this reason, the study investigated the hypothesis that positive evidence only will not be enough in parameter resetting process when the first and the second languages do not have the same parameter settings.

There is another reason behind choosing to include just positive evidence in the explicit or the implicit grammar lesson in this study. The reason that was pointed out earlier is testing whether positive evidence only will be enough or not to help in parameter resetting from its value in the first language to a different setting in the second language (sections 2.2.1 & 2.2.2). The second reason is hiding the ungrammatical forms while teaching to see whether the learners will be affected by such ungrammatical structures presented to them later in reading texts which is known in literature as the syntactic priming (section 3.1).

The first time that the participants see the ungrammatical structures in which verbs raise in English will be during the reading phase of the experiment, which will be done after teaching. This is assumed to help in checking whether the learners' acquired

knowledge of the taught grammar will be stable enough to deny such ungrammatical structures or whether they will be affected by such forms (which they were not told before that they are ungrammatical either explicitly or implicitly). Whether their knowledge is stable enough to resist any ungrammatical forms or not will be tested by investigating whether syntactic priming of ungrammatical structures will lead to changing the learners' previous grammaticality judgements which is known as syntactic satiation (section 3.1).

2.2. Universal Grammar

This section presents ideas taken from the Chomskyan 'Universal Grammar' approach (Chomsky, 1965) which have been adopted for this study. In particular, the study discusses some key ideas from the 'principles and parameters' approach including the 'verb-raising parameter' and the notion of 'parameter resetting'. The verb-raising parameter was chosen as it is assumed to have different settings in English and Arabic. This parameter refers to the movement of main verbs which is called 'raising' since 'this movement is allowed only from a lower to a higher projection' (Saeipoor et al 2011: 293). There are different properties associated with this parameter in English, including particular properties associated with Yes/No question formation and with adverb placement. These phenomena are central to the experimental investigation carried out in this study and reported below.

Chomsky defines Universal Grammar as 'the set of properties, conditions, or whatever constitutes the 'initial' state of the language learner, hence the basis on which knowledge of language develops' (Chomsky 1980 cited in Birdsong 1989: 90). Mitchell and Myles (2004: 91) suggest that the fact that it 'aims to describe and explain human languages' has led to it being 'hugely influential in helping researchers to draw up sophisticated hypotheses about a range of issues which are central to our

understanding of second language acquisition'. Many researchers have been inspired by this theory in the field of second language acquisition over the last decades, seeing it as useful in investigating 'the exact nature of the language system (the learner system as well as the first and the second language system), the interplay between the first and the second language in second language learners, [and] the linguistic knowledge learners bring to the task of second language acquisition' (Mitchell and Myles 2004: 91). This approach has a great influence in second language acquisition as it 'aims to define what all human languages have in common, as well as the distinctive characteristics that make human languages different from other systems of communication' (Mitchell and Myles 2004: 53-54). The rest of this section considers the notions of 'principles and parameters' in the Universal Grammar approach and the verb raising parameter in particular.

2.2.1 Principles and Parameters of Universal Grammar

Chomsky sees the language universals that he mentions in his Universal Grammar theory as consisting of principles and parameters. The Universal Grammar approach 'claims that all human beings inherit a universal set of principles and parameters that control the shape human languages can take, and which are what make human languages similar to one another' (Mitchell and Myles 2004: 54). In developing a theory of Universal Grammar, 'we attempt to construct a theory of universal grammar, a theory of the fixed invariant principles that constitutes the human language faculty and the parameters of variation associated with them' (Chomsky 1998: 133).

Universal Grammar's principles are 'aspects of language present in all human minds' which means that languages do not differ with regard to these principles. An example of these principles is structure-dependency which refers to the structural relationship between the different elements in a sentence which appears in all human languages. For example, all English speakers would feel that the sentence *Is Sam is

the dog that black? is not correct as this sentence has a structure-dependency violation by moving the *is* from the relative clause position (in *Sam is the dog that is black*) to the initial position. On the other hand, parameters 'are aspects that vary from one language to another' (Cook 1996: 30) and which determine the special characteristics of particular languages. Gass (1996: 332-333) points out that 'parameters are multi valued (usually only two values), often with 'setting' or parametric values differing between the NL and L2'. An example is the pro-drop parameter which refers to the difference between languages concerning whether a sentence must have an overt subject or not. Another example is the verb-raising parameter which is used in this study as an area of difference between Arabic and English (section 2.2.2).

Universal Grammar, then, consists of a set of invariant principles and parameters which can be set in different ways. Specific human languages are acquired through a process of 'setting the parameters in one of the permissible ways' (Chomsky 1998: 67). Particular languages arise by setting the parameters in one or another way' and the way the parameters of universal grammar are set results in 'yielding different languages' (Chomsky 1998: 133-134). Parameters can be thought of as being like 'switches' which 'are to be fixed by experience' (Chomsky 1998: 63). The language data presented to the child when learning a first language 'must suffice to set the switches one way or another'. Depending on this assumption, when the child has a command of a particular language, this means that the 'switches' are set in a particular way appropriate for the characteristics of that language. It can be said then that Chomsky considers acquiring a language as 'a process of setting the switches one way or another' (1998: 63). 'Hence, acquiring a language means how principles apply to a particular language and which value is appropriate for each parameter' (Saeipoor et al 2011: 292-293)

The notion of parameter resetting can help in understanding the relationship between learning a second language and the first language that the learner has already

acquired. De Carrico and Larsen-Freeman (2002: 28) suggest that the researchers who adhere to Chomsky's Universal Grammar theory see L2 learners as acquiring the target language by resetting parameters from their L1 value to L2 value. Flynn (1996: 121) refers to the close relationship between the study of Universal Grammar and the study of second language acquisition. She explains that during the time 'important theoretical and empirical advances have occurred in both domains of research' and that 'within L2 acquisition, one of the most promising of these has been the advancement of a principles and parameter-setting model in effort to explain the L2 learning process'.

A key question for Universal Grammar-based approaches to second language acquisition is about the relationship between UG, the initial state for first language acquisition, and second language acquisition. Do learners retain access to UG when learning second languages so that acquiring a second language involves setting parameters in new ways? Or do they begin from their L1 state and so have to 'reset' parameters from their L1 settings?

Gass (1996:330) discusses different points of view concerning the relationship between Universal Grammar and second language acquisition suggesting that 'the major question underlying this issue is the accessibility to UG of L2 learners'. Some researchers believe that L2 learners have access to Universal Grammar while others think that there is no such access. The first team is divided into two groups: those who believe in full access and those who believe in partial access. The full UG access supporters believe in that 'UG constrains grammar formation through the entire process of L2 acquisition' (Gass 1996: 330). The others think that L2 learners have a partial access to UG and that 'UG is the starting point' while the learner's first language blocks 'the full operation of UG' in the second language acquisition process. Other researchers think that L2 learners 'have no access to UG' and this point of view

suggests that 'the first language is the starting point' which 'provides the basis on which L2 develops' (Gass 1996: 330).

Gimenez (2001: 263) suggests that 'the UG approach to SLA is not as precise and well-tested as it may appear at first glance, as most UG studies are rather based on the researcher's introspective analysis of sometimes anecdotal evidence rather on an actual empirical one'. He argues that Universal Grammar is more related to first language acquisition than to second language learning. He adds that 'L1 and L2 learning are clearly different processes, and therefore attempts to transfer findings and expertise, obtained from research on the acquisition of L1 onto L2 acquisition are deemed to fail, or at least will surely lead to misconceptions on the nature of second language acquisition' (Gimenez 2001: 267). Rothman (2008: 1063-1064) considers the differences between L1 and L2 as evidence that Universal Grammar is not available to second language learners. He says that 'the descriptive observation of L1/L2 differences equates to the loss of implicit linguistic acquisition ability in adulthood; that L2 learners acquire language explicitly and in this sense decisively different than children'.

These arguments relate to the idea that there is a biologically-based critical period for second language acquisition that prevents older learner from achieving native-like competence. Bialystok and Hakuta (1999: 163) explain that 'the debate over the Critical Period Hypothesis embodies some of the basic questions about second language acquisition'. They refer to a number of research studies that studied this hypothesis which differ with regard to whether they give evidence for the critical period in second language acquisition or not . Bialystok and Hakuta (1999: 165) suggest that 'research into the critical period for second language acquisition has made use of a range of outcomes. The most sharply specified are the variables defined by Universal Grammar'.

One of the aims of this research is to explore how learners arrive at a parameter setting process in L2 which is different from the value that this parameter has in their L1. The notion of parameter setting or resetting is an aspect of Universal Grammar that helps in understanding the relationship between first language acquisition and second language learning. If learners have full access to UG, then this can be seen as involving parameter setting. If, on the other hand, they have no or limited access to UG, then this can be seen as a case of parameter resetting. While there are important differences between these two accounts of second language acquisition, this study does not aim to provide evidence directly for one view or the other. What it does investigate is how effective the two teaching methods used here are in using positive evidence only to establish a new parameter setting for a second language. From now on, I will use the term 'resetting' while understanding that this process may in fact not involve 'changing' a current L1 parameter setting but instead involve acquiring a setting for L2 without taking the L1 position as a starting point. The verb raising parameter is the one focused on here. It is explained in the next subsection.

2.2.2. Verb-Raising Parameter

The verb-raising parameter refers to 'whether a language exhibits verb movement or not' (Ritchie &Bhatia 1996: 705). In English, the verb raising parameter states that 'main verbs in English cannot raise to I [Inflectional Phrase]. Verb raising means 'moving (or raising) the verb to a higher position in the tree' (Smith 1999:126). 'Tree' here refers to 'phrase structure trees' (Figures 1,2,3,4 &5) which are used to illustrate the structure of sentences.

The verb raising parameter is associated with a number of properties among which are adverb-placement and Yes/No question formation. This study focuses on these two properties to test the 'resetting' of the verb-raising parameter from Arabic (the first language of the participants) to English (the second language they are

learning). The grammar lessons that were taught during the teaching phase of the experiment included a wider range of topics in English grammar, partly to reduce the risk that students could become aware of which topics the study was particularly interested in and partly because the participants would not benefit from lessons which only focused on one specific aspect of English.

Adverb placement was chosen as one of the properties associated with the verb raising parameter to be taught in English because 'the crucial condition for demonstrating knowledge of the ungrammaticality of verb-raising in English was for the ungrammatical SVAO pattern (Lardiere 2006: 42). This idea was also mentioned by White (1995: 64) who refers to the idea that the property of English that it does not allow the main verb over an adverb is 'one of a cluster of properties associated with the parameter'. It is ungrammatical in English to put an adverb between the main verb and the object as in sentence (2) below. This is based on the assumption that 'an adverb cannot appear between the lexical verb and the object NP in English' (Mandell 1999: 77). The main verb in English appears to the right of the adverb and does not raise i.e does not appear to its left. Thus, 'the appearance of adverbials ... between the lexical verbs and their object NPs... is evidence that the V has moved from the head of the VP' (Mandell 1999: 81). For this reason, sentence (1) is grammatical as the main verb does not raise to the I position in the tree diagram that illustrates the structure of this sentence in figure (1) below. On the other hand, sentence (2) is ungrammatical because the main verb in this case raises to the (I) position in the tree diagram that appears in figure 2, which is not grammatical in English.

(1)   John always helps Mary.

(2)   John helps always Mary.
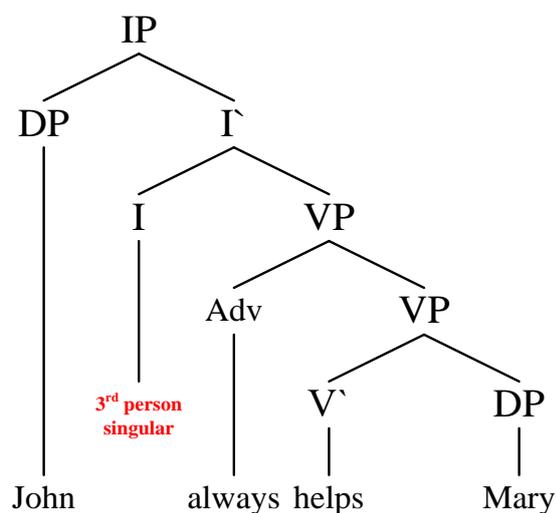
Figure 1: grammatical English sentence where the main verb does not raise to I
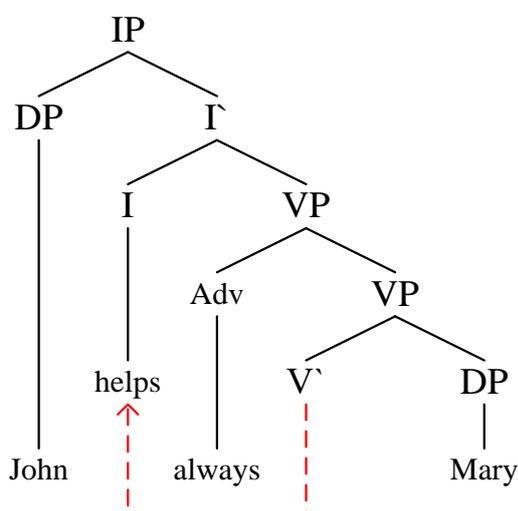
Figure 2: ungrammatical adverb placement in an English sentence in which the main verb raises to I over an adverb

Some languages, including French and Arabic, allow raising of the main verb over an adverb. When learners assume that English is like those languages, they accept and produce sentences like (John helps always Mary) where the adverb intervenes between the verb and the object which is not grammatical in English. Sentences like يساعد احمد دائما والده/usaedu ahmad daeman waledahu/, which can be 'translated' into English as *Helps Ahmad always his father*? Or *Helps Ahmad his father always?* is grammatical in Arabic. L2 learners who produce such utterances in English in this case

have not set this parameter to be appropriate for the English language in which verbs do not raise believing that what is appropriate in their first language can be correct with the second language.

Fakih (2006: 38) says that verb raising is always overt in Arabic and that this is one of the parametric differences between Arabic and English. He says that 'it is claimed that in English-type languages, for example, TNS appears inside AGR, whereas in Arabic-type languages TNS appears outside AGR'. This means that verbs do not raise to I position (outside AGR) in English while they do in Arabic. White (1991a, 1991b) argues that L2 learners who have adopted the L1 parameter setting which permits verb raising over an adverb (which is the case with the participants in this study), will need to have much explanation and that negative evidence is required to show them that such a structure is not grammatical in English. She suggests, then, that L2 learners will require negative evidence to help them to reset parameters in certain cases where the first and the second languages have two different values for the same parameter.

However, negative evidence was not provided in the grammar lessons given during the teaching phase of this study. The study therefore provides evidence that participants can reset this parameter without negative evidence, in spite of the fact that their first language permits verb raising over an adverb while the second language they are learning does not.

The study also focused on Yes/No question formation as another property associated with the lack of verb movement in English. Hamann (2000: 279) explains that one of the phenomena that follow from the inability of main verbs to raise is that we need to have *do-support*. This is because in English, main verbs cannot raise to I and therefore cannot raise to C at the beginning of a sentence (to form questions) from

there. She says, 'the English main verb cannot do this....in order to fulfil the relevant criteria, a dummy auxiliary which carries the required features must be inserted in English' (Hamann:279).

However, this is not the case with Arabic which allows verb raising so that 'the Arabic sentence places the verb first followed by the subject' (Smith 1987: 148) which means that the Arab participants who are included in this study are familiar with verbs in C position at the beginning of the sentence. The teaching lessons included how to form Yes/No questions in English without teaching that moving the main verbs to the beginning of a sentence to form questions is not grammatical in English. This is because the study was based on presenting positive evidence only as explained before.

For the reason that English does not allow main verbs raising to the beginning of the sentence to form Yes/No questions, sentence (3) is grammatical in English as illustrated in the tree diagram (figure 3). In this sentence, the dummy *do* is inserted in C position to form the Yes/No question On the other hand, sentence (4) is ungrammatical because the main verb raises to I and then to C to form the question (see figure 4) which is not grammatical in English.

(3)   Do you watch TV?

(4)   Watch you TV?
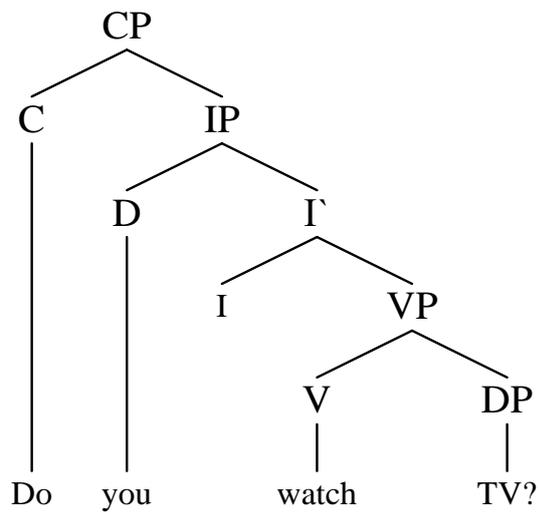
Figure 3: grammatical Yes/No question in English
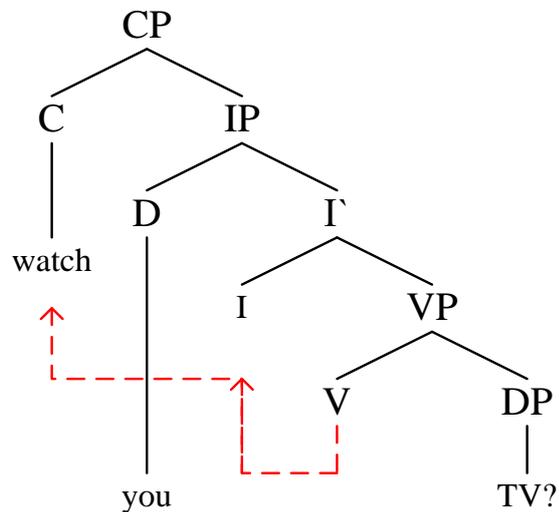
Figure 4: Ungrammatical Yes/No question in which the main verb raises to I and then to C to form the question

However, there is no need to insert the dummy auxiliary (do) wherever there is an auxiliary in the sentence as it is possible for auxiliaries (not main verbs) to raise to I and to C to form questions. For this reason sentence (5) is grammatical as it appears in the tree diagram in figure (5).

(5)   Are you watching TV?
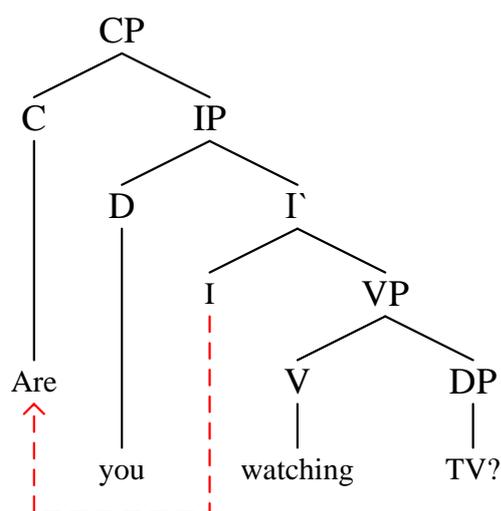
Figure 5: Grammatical Yes/No question in which the auxiliary verb raises to C to form the question.

2.2.3. Verb-Raising Parameter Resetting in Second Language Acquisition:

Many studies have investigated aspects of verb raising parameter resetting from L1 to L2. Mandell (1999: 82) explains that 'most of the research related to the V-movement parameter has examined data from L2 learners of French who share English as an L1 or, conversely, L2 learners of English who share French as their L1'. However, in Mandell's study on the verb-raising parameter (1999), the 204 participants who were included, were adult L2 learners of Spanish who share English as their L1. He says that in Spanish, 'the movement of the verb to the head of the TP allows the adverbial to appear between the lexical verb and the object NP' (Mandell 1999: 81) while it does not in English. The findings of his study suggested that the participants were gradually able to reset the parameter. The gradual resetting of the verb raising parameter happened in this case from a language which does not permit verb raising (English) to a language that allows such raising (Spanish). My study about explicit or implicit teaching is different from Mandell's study in that it examines a parameter resetting process from Arabic which allows verb-raising to English that does not.

The aim of exploring whether explicit instructions would help the participants to reset this parameter from Arabic settings to English settings is associated with another

aim which is to test their ability to do this based only on positive evidence instructions (i.e. without negative evidence). The ungrammatical forms were not presented in the classroom at all. The study later checked whether these structures would be primed for the participants when they encountered them in the texts during the reading stage. The fact that Arabic allows verb-raising suggests that these ungrammatical English structures could look like grammatical Arabic structures which increases the possibility of a syntactic priming effect associated with these ungrammatical structures.

Trahey and White (1993) designed a similar study in which they tested the possibility of verb-raising parameter resetting from a first language that allows verb raising to a second language which does not allow verb-raising, also based on the presentation of positive evidence only. They included fifty-four francophone children aged 11 years old in an intensive 'English- as- a -second language- program' in Quebec. Their participants were exposed to a large number of examples containing the 'correct' structure in English (SAVO) for weeks. The results of exams carried out after the teaching showed an increase in the use of the English SVA order but little or no decline in the 'incorrect' usage of SVAO order. They concluded that positive evidence did not serve to change the settings of their first language parameter to be appropriate for the L2 different settings. In this case, acquiring the correct SAV order did not lead to losing the incorrect SVAO order. As a result of this study, it was concluded that positive evidence was not enough to show the learners that forms with an SVAO structure are not grammatical in English. Either these learners were not resetting the parameter from its L1 setting or they were acquiring the appropriate L2 setting alongside its L1 and continuing to use the L1 setting in L2 utterances.

Muneera and Wong (2014) designed a study to investigate the acquisition of the verb movement parameter in English by adult Arabic speaking learners of English as a second language. Their study was similar to my present study in that it was based on

the fact that 'English and Arabic differ in the settings they adopt for the verb movement parameter, English is [-strong], while Arabic is [+strong]' (p.195). This means that main verbs raise in Arabic sentences while they do not in English. However, Muneera and Wong's study was different from this present study in that , they examined whether Arabic ESL learners can reset the verb movement parameter by correct placing of verbs with respect to 'negation, adverbs and FQs [floating quantifiers] in finite and non-finite contexts with lexical and auxiliary verbs' (2014: 195).

The findings of the oral production task that was used to get data from the participants showed that 'resetting the English verb movement parameter seemed to be problematic for the adult Arabic learners' (Muneera and Wong 2014: 210). They explain that their participants had 'difficulty producing the Neg V, S Adv V, and S FQ V orders, indicating failure to reset the parameters of [+ strong] to their target values in English' (p.210). This means that their subjects erroneously placed main verbs before negation (e.g. *they played not in the yard*), placed main verbs before adverbs (e.g*John lost completely his mind*) while putting these verbs before quantifiers (e.g*Jane and Sarah built both a house*). Muneera and Wong (2014) consider this result as evidence that 'post-childhood adult L2 learners are unable to reset parameters from their L1 values to L2 settings where these differ from the L1 settings' (p.195).

The difference between the present study and Muneera and Wong's study is that they used correct verb placement in an oral production task. They used it to test whether the participants have acquired the correct verb movement settings in English by 'looking at the syntactic behaviour of the verb in relation to certain other elements that occur left-adjoined to the VP, such as negation element, adverbs and floating quantifiers' (Muneera and Wong 2014: 209-210). On the contrary, my study used acceptability judgement tasks with formative written exams to test the participants'

acquired knowledge of Yes/No question formation. This tested verb-raising to I and then to C to form the questions which was not tested in Muneera and Wong's study.

The present study does not completely neglect the idea of looking at the relationship between the main verb and other elements to its left as it also included adverb placement (which was one of the elements studied by Muneera and Wong 2014) to test acquisition of the verb-raising parameter in English. In other words, the present study used two different parameterized properties associated with verb movement to test whether there was evidence of a parameter resetting process. This was done to provide an opportunity to investigate whether testing the performance of the participants concerning the behaviour of an element that is adjoined to the left of the VP (adverb-placement in this study) can give similar results to their performance in raising verbs to I and then to C to form questions.

2.3 Acceptability Judgment Tasks

This section discusses acceptability judgment tasks and some of the ways in which they have been used in second language acquisition research. It presents some studies which used these tasks to gather data from second language learners. It also discusses issues around the reliability of such tasks as a source of data in the field of second language acquisition and considers a number of findings from previous research investigating the reliability of tasks like these. What I am terming 'acceptability judgment tasks' are often referred to as 'grammaticality judgment tasks'. Sharwood Smith (1994: 78) describes these tasks as 'perhaps the most important test of linguistic intuitions used with native speakers and with learners'. In these tasks, 'subjects are provided with samples of language and asked to judge them as 'acceptable' or 'unacceptable' (Sharwood Smith 1994: 78). Seliger and Shohamy (1989: 177) define acceptability judgment tasks as 'an elicitation technique where the test-taker is presented with correct

and incorrect language items and is expected to decide whether they are acceptable or not'.

The term 'grammaticality judgement task' is misleading. This can be seen by the fact that researchers often make a distinction between judgements about grammaticality and judgements about acceptability and in fact, the precise wording of particular tasks varies, with some researchers using other ways of describing the judgments they are asking individuals to make. Odlin (1994: 273) suggests that the notion of grammaticality is related to descriptive grammar. She claims that 'to judge the grammaticality of a sentence is to say whether or not the sentence is consistent with the grammar describing the language, regardless of whether speakers consider the sentence to be nonstandard, stylistically inappropriate , or infelicitous in any other way'. Acceptability judgements, on the other hand, are concerned with whether it is stylistically appropriate or not. For example, the sentence 'colourless green ideas sleep furiously' is grammatical in English but English speakers cannot accept it as a meaningful sentence.

This explanation presented by Odlin (1994) presents one aspect of the issues related to grammaticality judgements which is that it depends on one sense of what 'grammatical' means. Chomsky (1965: 11) explains the difference between grammaticality and acceptability by saying that the notion of acceptability should not be confused with grammaticality because 'acceptability is a concept that belongs to the study of performance, whereas grammaticalness belongs to the study of competence'. This refers to the idea that the performance of grammaticality judgement tasks depends on what the participants will think they are being asked to do which varies from one individual to another.

Of course, a key issue is what individual informants think they are being asked to do. If the instructions in a task simply ask for judgments about whether something is 'grammatical', there are several ways in which individuals might understand that term. In this research, however, grammaticality judgements and acceptability judgements are considered as synonyms following the existing literature as indicated by Schütze (1996: 26). I use the term 'acceptability' most often since the judgment individuals make cannot be directly about 'grammar' as understood as the system underlying a language they know (and which they have developed understanding of implicitly).

2.3.1 Acceptability Judgement tasks in Second Language Acquisition Research

This study uses acceptability judgment tasks as a method to gather data about the knowledge of the target language. Acceptability judgment tasks have been widely used in the field of second language research to 'test the metalinguistic ability of the learners which is believed to indicate competence in the second language' (Seliger and Shohamy 1989: 177). Building competence in the second language is the goal of any second language teaching programme so it is very important to know whether a certain method or procedure of teaching a second language is useful in constructing knowledge (competence) of that target language.

Mandell (1999: 74-75) points out that a large number of researchers have investigated 'methodological issues related to the use of GJ tests in SLA research design' (GJ stands for 'Grammaticality Judgments'). He points out that 'two related questions appear to motivate the majority of this body of research. First, do GJ tests measure L2 learner competence?...Second, are grammaticality judgements about the L2 comparable to grammaticality judgements about the L1?'. He explains that he is understanding linguistic competence in this case as referring to 'the linguistic knowledge underlying learners' language performance' (a main interest of this study). Acceptability judgement tasks are used here to elicit intuitions from the participants

about the acceptability of certain structures and so to test whether they have been able to reset the verb raising parameter from their L1values to L2 settings.

As Ellis (1994: 613) says, researchers have measured learning outcomes in different ways, including the use of a formal language test involving multiple choice questions or grammaticality judgement tasks. He (1994: 705) points out that these tasks are used to obtain data on what learners know about the second language by asking them to judge whether they think that certain sentences are acceptable or not. He explains the reason that researchers prefer this method by saying that it enables them to get information about the learners' intuitions which reflect their internalized knowledge. This fact is also mentioned by Schütze (1996: 95) who says that judgment data from adult second language learners 'have been used in exploring the relationship between judgment and competence'.

Poole (2002: 11) discusses the relationship between a speaker's intuitions about grammaticality and his/her linguistic competence saying that 'our intuitions about grammaticality stem from the fact that the brain contains a system for analyzing sentences. When presented with a sentence of English, it is analyzed by the cognitive system that you possess providing you with a judgement about its acceptability'.

However, other researchers doubt the value of grammaticality judgements as indicators reflecting competence directly. Cook (1996: 60) says that grammaticality judgement tests are 'a kind of performance indirectly linked to competence'. Birdsong (1989: 72) expresses a similar point of view when considering these tasks as providing data on metalinguistic performance, 'it would seem axiomatic that metalinguistic performance should not be equated with linguistic competence'.

When Chomsky first proposed the competence-performance distinction, he suggested that it involved 'a fundamental distinction between competence (the speaker-hearer knowledge of his language) and performance (the actual use of language in concrete situations)' (Chomsky 1965: 4). Shohamy (1996: 138) points out that the term competence was used by Chomsky to refer 'exclusively to knowledge...not including the notion of capacity or ability. This competence refers to 'a state' or a product rather than to a process'. This means that this term was used to refer to a state of knowledge or to knowledge as a product of acquiring or learning a language in an individual's brain.

On the other hand, Lyons(1996:13) suggests that the term performance is defined by Chomsky and other linguists in its process sense, but actually often used in its product sense. Lyons illustrates this argument by saying that linguists use the term performance in the sense of behaviour. However, the primary data analysed by those linguists are not the acts of writing or speaking but the products of these processes: spoken or written products performed by individuals. Lyons (1996: 13) says that performance 'is almost used with reference to the products of a process, or alternatively it tends to shift between, or to amalgamate both senses'.

2.3.2. Using GJ Tasks in Evaluating the Usefulness of Explicit Teaching in Building Linguistic Competence in a Second Language

A key concern of this study is to investigate the role of formal explicit second language instructions (using the Grammar Translation method) in building knowledge of the second language (English in this case) which is different from learners' knowledge of their first language (Arabic). Ellis (1990: 146) suggests that experimental studies on the effect of explicit instruction fall into three categories: '(1) accuracy studies, (2) acquisition sequence studies and (3) projection studies'.

One of these studies was carried out by Lightbown, Spada and Wallace (1980) to explore the role of explicit instructions on building knowledge of second language grammar. They designed their study to test the effect of thirty-minute explicit English grammar lessons on the performance of 175 French learners of English as a second language. The grammatical structures taught in this study included the use of the morphological suffixes; plural-*s*, possessive –*s*, third person singular –*s*, copula-*s*, auxiliary-*s* and the locative prepositions. All these structures had already been introduced and taught explicitly to the subjects, apart from the locative prepositions. A significant increase in the overall scores of about 11% from the pre-test to the post-test indicated a very useful effect from the explicit instructions on the acquisition process. The post-test results of a control group which did not receive any kind of explicit instructions improved only by 3%.

Kadia (1988) designed an experiment to see whether formal instruction was successful in enabling an adult Chinese student of English as a second language to avoid errors in the acquisition of ditransitive and phrasal verb constructions in English. This study was carried out in two stages. The first stage involves a pre-test which consisted of a substitution test and a grammaticality judgment test. Then, each participant was provided with forty minutes of formal instructions presented as formal explanation and drills. After that period of instruction, the subject was observed in informal contexts for nine weeks. After this, the second stage involved a post-test similar to the pre-test, was carried out. The results of this experiment indicated no effect on the subject's spontaneous language production, but there was some evidence that it contributed to the overall controlled production in the post-test. Kadia (1988: 513) concludes that 'formal instruction seemed to have very little effect on spontaneous production, but it was beneficial for controlled performance'.

This study is similar to these studies in that it uses acceptability judgment tasks to gather data from the participants and that it consists of a pre-test and a post-test stage to examine the effects of the 'positive evidence only' instructions that were given during the teaching stage of the study. In its third stage, the study tested the stability of the knowledge acquired by assessing whether it was affected by exposure to ungrammatical primes which can lead to changes in the previous judgments, and to what is known as 'syntactic satiation' (section 3.1).

2.3.3. The Reliability of Acceptability Judgment Tasks in Second Language Acquisition Research

Several studies have aimed to test the reliability and the consistency of acceptability judgment tasks as a source of data in second language acquisition research. Mandell (1999: 76) points out that 'studies addressing questions related to the reliability of GJ tasks vary greatly' and that they have focused on many areas of linguistic knowledge such as tense, person, question formation, word order,...etc. Ellis (1991) carried out an investigation to test whether such judgments are reliable or not. He used an acceptability judgment task with 21 adult advanced Chinese learners of English testing their knowledge of dative alternation in English. He repeated the test with only eight of the subjects using a reduced version of the first test and introduced it as a think-aloud task. The results of this experiment showed that the participants' judgments were inconsistent in a considerable part of their judgment because of their usage of different strategies in the task. He concludes that the use of strategies as a result of indeterminate knowledge invalidates evidence gathered from acceptability judgments.

Other studies tested the reliability of acceptability judgment tasks by repeating these tasks more than one time and by making a comparison between the judgements given on each task. Gass (1994) examined the reliability of these tasks by comparing judgements about sentences containing relative clauses by Chinese, Korean and

Japanese learners of English as a second language. She repeated the tasks twice with the same participants with a one-week interval between administrations. She concluded that, although there were some differences between the two administrations, the overall results showed that the subjects' performance was significantly reliable.

It was mentioned previously that 'syntactic satiation' is used as a term to describe rating changes in acceptability tasks when participants change their responses from *no* to *yes.* The existence of syntactic satiation effects is used in this study as evidence against the reliability of acceptability tasks as a source of data in second language acquisition research. The study is interested in testing whether the participants will accept structures that they rejected earlier (satiation) as a result of priming some ungrammatical structures in reading tasks. This means that syntactic satiation, if it happens, is used in this study as an indication that judgements are changeable. Consequently, such instability may put some doubt on regarding these judgements as a reliable source of data in second language acquisition research. However, satiation effects suggest unreliability, but at the same time changing responses in tasks due to satiation effects are being taken as evidence of something so there is a level at which acceptability judgment tasks are reliable.

Syntactic Priming and Syntactic Satiation

The main method used in this study was to test the stability of the acquired L2 knowledge acquired by the two groups of participants was based on the notion of syntactic priming and syntactic satiation. Acceptability judgment tasks and formative exams were used to test knowledge before and after teaching. The reading phase of the study exposed learners to ungrammatical expressions and then participants took part in new acceptability judgment tasks designed to reveal any evidence of satiation effects. The presence of satiation effects would be taken to indicate some unreliability in the acceptability judgments of the participants. Satiation effects could also be taken to cast doubt on the reliability of acceptability judgment tasks more generally, since susceptibility to satiation effects indicates some instability in acceptability judgments. At the same time, the study of satiation effects helps to develop understanding of the nature of acceptability judgments and how they can be caused to change. A key assumption underlying the method used here is that resistance to satiation effects can be taken to indicate the relative robustness of knowledge acquired by each teaching method. The results of the study are presented and discussed in chapters 5 and 6 below. Neither group of participants showed satiation effects regarding adverb placement. This suggests that both teaching methods were effective with regard to Yes/No questions and the explicit method was more successful for adverb placement.

This chapter explains the notion of syntactic priming and syntactic satiation, discusses previous research on these phenomena, and indicates how they have been used here. Previous studies tested syntactic priming and satiation among native

speakers of English and a number of other languages such Spanish and Chinese. They focused on different types of islands as target structures as in Snyder (2000) and Sprouse (2009). This study differs from previous studies in focusing on priming and satiation in a second language and in investigating the possibility of using satiation phenomena as a tool in investigating second language knowledge and the effectiveness of teaching methods.

3.1. Syntactic Priming and Syntactic Satiation

Syntactic satiation (Snyder 2000) refers to the phenomenon where there is an increase in acceptability judgements for structures previously assumed to be unacceptable (and assumed to be ungrammatical). Snyder explains that it has been reported overtime that 'certain types of sentences that were initially judged ungrammatical begin to sound increasingly acceptable'. He points out that this phenomenon 'is sometimes referred to as ''linguists' disease'', or a 'syntactic satiation effect'' (Snyder 2000: 575). As an observable fact that can be noticed in the linguistic performance of human beings, Sprouse (2009:330) suggests that 'satiation is a topic that touches on the work of both linguists and psycholinguists' and that it 'has implications for linguistic methodology, linguistic theory and the structure of linguistic representations'.

The term 'syntactic priming' is used to describe 'the facilitation of a given structure through previous exposure to that structure' (Sprouse, 2009: 330). This term is different from syntactic satiation in that it refers to producing structures rather than judging them as acceptable or not. Syntactic priming is employed in psycholinguistic literature as a term to describe the tendency to repeat structures. It is discussed by Bock (1986) and Branigan et al (2005) who describe priming as evidenced by 'strong and reliable demonstrations of syntactic repetition in language production' (Branigan et al 2005: 469). Francom (2009: 21) connects the two phenomena, saying that 'it has been

observed that some types of otherwise anomalous sentence structures appear to become more acceptable [satiation] with repeated exposure to them [priming]'.

So Francom (2009) considers syntactic satiation to be a result of syntactic priming. Some other researchers share this view, suggesting that 'satiation might just be a token of syntactic priming' (Sprouse, 2009: 330). This cause and effect relationship has led other researchers (e.g Hofmeister et al, 2013) to consider syntactic priming and syntactic satiation as two different names for the same phenomenon. They explain that 'acceptability judgements sometimes rise over the course of the experiment, a phenomenon that has been labelled 'structural facilitation', 'satiation', and 'priming'' (p.48). It is possible, though that one could be a symptom of the other or both could be a symptom of the same thing.

There is a continuing debate in the field of experimental syntax on whether syntactic satiation is a result of syntactic priming. Crawford (2012) doubts the idea that syntactic satiation happens as a result of syntactic priming on the basis of her findings which suggest that satiation does not affect all sentence types equally. Other researchers, such as Hiramatsu (2000), Francom (2009) and Crawford (2012) share this view. They take the fact that satiation does not affect all sentence types equally as a reason for their claims that satiation does not happen as a result of priming.

In this study, it is assumed that priming can lead to satiation in some cases. The tests described below look for satiation effects which, it is assumed, have arisen via syntactic priming. However, the significance of the results does not depend on specific assumptions about the relationship between priming and satiation.

3.2 Previous Studies on Syntactic Satiation and Syntactic Priming

The notion of syntactic satiation has been widely investigated by research in experimental syntax since it was first pointed out by Snyder in 2000. As mentioned, these studies have focused mainly on the language production of native speakers of

English and some other languages, and on 'syntactic island effects' (Hofmeister et al, 2013:42). Sprouse et al (2015) explain that an island effect is as a result of 'the existence of long-distance dependencies between two (or more) elements in a sentence'. For example, the wh-interrogative clause (1. *What* does Susan think that John bought __?) 'illustrates a long-distance dependency between the wh-word or wh-phrase at the beginning of the sentence, which is often called the *antecedent* or the *filler*, and the argument position of an embedded verb, which is often called the *gap position*'. They suggest that '[a]lthough long-distance dependencies are unconstrained with respect to length as measured in number of words or number of clauses, as in (1), there do appear to be constraints on the types of structures that can contain the gap position, as in (2 *What did you make [the claim that John bought __]?'.Sprouse et al (2015) say that 'the unacceptability that arises when the gap position occurs inside one of the prohibited structures [as in 2] is often referred to as an *island effect*, which draws on the metaphor that the prohibited structures are *islands* that prevent the wh-words or wh-phrases from *moving* to the front of the sentence'.

Hofmeister et al (2013: 42) point out that 'the classic data surrounding island effects indicate that unacceptability results when dependencies enter into certain syntactic configurations, such as relative clauses (1) and interrogative clauses (2)' and suggest that such structures are suitable for investigating satiation because they 'involve the low acceptability ratings elicited by sentences with long-distance dependencies into certain syntactic configurations'. Goodall (2005) takes a different approach from other studies as he focuses on syntactic satiation in work on comparative syntax to make a comparison between the subject-auxiliary inversion in English and in Spanish.

The most important studies that investigated syntactic satiation and syntactic priming are presented in the following sections.

3.2.1. Snyder (2000)

This study has been considered an important 'pioneering work' (Myers 2012:453) in the field of syntactic satiation studies. Goodall (2005:8) explains the importance of this study by saying that 'although this phenomenon [acceptability change or syntactic satiation] is familiar to syntacticians anecdotally, it did not begin to be explored systematically until Snyder (2000)'. The main goal of Snyder's study 'was to induce experimentally the change in judgements reported by linguists' (Crawford 2012: 38) and to explore 'whether syntactic satiation effects can be induced experimentally' (Snyder 2000: 575). More specifically, it considers whether syntactic satiation is found to a comparable degree for all ungrammatical sentence types or 'are there specific types of ungrammatical sentences that are especially susceptible?' (Crawford 2012: 575). If the latter, Snyder explains that he then wants to examine 'which types of violations ''satiate'' most easily?'(Crawford 2012: 575).

The experiment in Snyder's study included 22 undergraduate university students who were instructed to judge 58 sentences as acceptable or not by choosing either *yes* or *no*. The sentences included '7 kinds of grammatical violations which are subject, adjunct and whether-island, complex NP, that-trace, want-for and left branch violations'. He presents a list of the tested ungrammatical sentence types with examples (Snyder 2000: 576) as follows (where't' represents a trace):

a.   'Want-for

Who does John want for Mary to meet[t]?

b.   Whether-*island*

Who does John wonder whether Mary likes [t]?

c.   That-*trace*

Who does Mary think that [t] likes John?

d.   *Subject island*

What does John know that a bottle of [t] fell on the floor?

e.   Complex NP

Who does Mary believe the claim that John likes [t]?

f. Adjunct island

Who did John talk with Mary after seeing [t]?

g.   Left branch

How many did John buy [t] books?'

The experiment included 50 target sentences which were divided into five blocks of ten sentences each. Each group contained one of each of the seven tested violation types and three grammatical sentences as fillers. 'Syntactic satiation was measured for each sentence type by comparing the number of *yes* responses in the first two blocks to the number of *yes* responses in the last two blocks' (Snyder 2000: 577). Snyder considered a subject 'to have exhibited satiation for a given sentence type if the number of *yes* responses in the last two blocks exceeded the number in the first two blocks' (Snyder 2000: 577).

The fact that the number of *yes* responses in the last part of the questionnaire is bigger than the number of these responses in the beginning demonstrates that the level of acceptability has changed and increased. This demonstrates the key notion of syntactic satiation that certain types of structure were first rejected by a participant (i.e. they chose *no*), and then accepted later (by choosing *yes*). Snyder (2000) decided that 'a sentence type was said to have exhibited satiation if the number of subjects showing an increase in *yes* responses (i.e satiation) was significantly greater ...than the number of subjects showing a decrease in *yes* responses' (Snyder 2000: 577).

Snyder designed this study to investigate the reliability of grammaticality judgment tasks and 'to induce experimentally the change in judgments reported by

linguists' (Crawford 2012: 38). Moreover, Snyder (2000) also aimed to examine whether this phenomenon would be reported with nonlinguists as well and, in so doing, to respond to critics of the use of acceptability judgements as a source of data, who have sometimes used the change of judgments (satiation) reported by linguists 'as evidence of the instability of the data underlying syntactic theory' (Sprouse 2009: 329). He assumed that 'if instability is an inherent property of judgments and not just a symptom of ''doing linguistics'', then nonlinguists should exhibit it as well' (Sprouse 2009: 329). He reasoned that if the phenomenon of judgement change i.e satiation, is recorded with the undergraduate students with no linguistic training who participated in this study, then it is a property of judgments, 'not just a symptom of doing linguistics'(Sprouse 2009: 329). Another goal of Snyder's study is to investigate whether all sentence types should exhibit satiation or to take it as a general phenomenon of judgments. It was assumed that 'if only a subset of unacceptable sentences show the instability, then instability could be a property of specific structures or constraints, and not the judgment process'(Sprouse 2009: 329).

Snyder's results showed that some of the seven violation types that he included have exhibited satiation. This result has provided positive evidence in response to the main research question of this study by concluding that 'syntactic satiation effects can be induced experimentally in the laboratory' (Snyder 2000: 579). He found significant satiation for *complex NP* islands and *whether*-islands and marginal satiation for subject islands. On the other hand, it was noticed that the *that*-trace effects and *left-branch* effects were not subject to satiation. Since satiation was noticed for some sentences and not for others, Snyder concluded that the satiation effects 'were specific to certain sentence types ... thus, satiation is not an across-the-board phenomenon affecting all sentence types equally' (Snyder 2000:579-580). In addition, Snyder (2000: 580) concluded that 'the satiation effects observed in this study were not tied to specific

combinations of lexical items such as *wonder*, *whether*, or *believe the claim*'. This conclusion led Snyder to argue that 'it does not appear that syntactic satiation is simply the result of learning a new idiom chunk'.

Snyder (2000:579) tested whether the stability of a sentence type corresponds to its initial acceptability. He asked ten more participants to complete the same questionnaire used with the other participants using a numerical system instead of *yes* or *no* judgments. The scale ranged from 0 for a sentence judged completely ungrammatical to 5 for one considered fully grammatical. The results showed that 'the stability of a sentence type does not appear to correspond in any simple way to its initial acceptability'. This was based on the result that 'the sentence types exhibiting significant satiation, *whether*-islands and *complex-NP* violations, were dissimilar in their numerical ratings'.

Snyder (2000: 580) makes a connection between degrees of grammaticality and satiation effects. This connection is based on the fact that some violation types satiated, while others did not. He explains that 'the ''satiability'' of the classic subjacency effects namely, the *Wh*-island effect and the *complex NP* effect, indicates a different grammatical status from the adjunct island effect, *that*-trace effect, *left-branch* effect, and *want-for* effect [which were not subject to satiation]'. Snyder (2000: 580-581) suggests that this can be the result of one of two possibilities. 'One possibility is that the satiable effects reflect limitations of sentence processing, rather than genuine constraints of the speaker's grammatical competence'. The second explanation he gives is that 'the satiability of an island effect may reflect its membership in a distinctive subclass of constraints within the competence grammar'. On this view, ''satiating'' versus ''nonsatiating'' might be taken as one particular dimension along which the percept of ungrammaticality varies, comparable to the dimension of ''strength of ungrammaticality''.

This debate is based on 'whether satiable violations in fact reflect constraints of grammar or of sentence processing' (Snyder 2000: 581). Snyder claims that the results of this study show that '*whether*-island configuration is commonly perceived to be nearly or fully grammatical, whereas the *that*-trace configuration continues to be perceived as moderately grammatical'. He takes this as evidence that 'the (grammatical or processing) constraint responsible for *that*-trace effects cannot be identical to the constraint responsible for *whether*-island'. This implies that 'only one of the two constraints is susceptible to satiation' (Snyder 2000: 581).

The most important finding of Snyder's experiment is that satiation is recorded with undergraduate students with no special linguistic training which means that this phenomenon is not tied to linguists. Goodall (2005:8) summarizes the outcomes of this study by saying that Snyder has 'made two important findings (i) that syntactic satiation can be induced in subjects in an experimental setting, and (ii) that, not all sentence types are susceptible to satiation'. In a more specific level, Snyder's study confirms that fact that 'intuitions can shift [which] suggests that satiation ''reflects limitations on sentence processing'' rather than competence' (Myers 2012: 453).

3.2.2 Hiramatsu (2000)

Hiramatsu (2000) described the purpose of her study as studying the phenomenon which 'linguists have noticed anecdotally that certain types of island violations become increasingly acceptable after repeated exposure' (Hiramatsu 2000: i). She aimed to examine whether this 'so called ''syntactic satiation'' is a general performance phenomenon or constrained by syntax'. For this purpose, she examines whether some 'subject-related factors, such as handedness or linguistic training, and task-related factors such as general reading ability, response time and presentation method, are associated with satiation' (Hiramatsu 2000: ii).

In her study, Hiramatsu retests island violations and in designing her tasks, she increases the number of repetitions of each violation type from the five used in Snyder (2000) to seven. Myers (2012: 454) explains that 'in her judgment experiment, Hiramatsu (2000) found no evidence of adjunct island satiation in English, in contrast to other island violations that did satiate'. In general, she concludes that syntactic satiation is constrained by syntax and that it is a reflection of competence.

3.2.3 Goodall (2005)

The difference in this study is that Goodall uses 'the phenomenon of judgment satiation' (2005: 2) as a tool in making a comparison between two languages. He investigates the notion of similarity between English and Spanish in exhibiting 'an inversion effect in wh-questions: a verbal element must appear to the left of the subject'. Goodall (2005: 2) explains that both English and Spanish 'exhibit an inversion effect in wh-questions: a verbal element must appear to the left of the subject' and that 'analyses differ, however, as to whether this effect is due to similar subject mechanisms in the two languages or not'. Syntactic satiation is used in this study to examine 'whether this [inversion] effect is due to similar syntactic mechanisms in the two languages or not' (Goodall 2005: 2). The new addition of this study to the field of studying syntactic satiation effects is that 'in addition to providing new evidence regarding the nature of inversion in wh-questions, this study also constitutes a test case for using satiation in the service of comparative syntax' (Goodall 2005:2).

Goodall (2005: 5) explains the phenomenon that is known as inversion by saying that 'in a number of languages with canonically preverbal subjects, a verbal element must be to the left of the subject in wh-questions, among other environments. Goodall explains that this phenomenon is 'most famously exemplified by the case of Subject-Auxiliary inversion' and this appears in English and in Romance languages such as Spanish. Goodall (2005:3) argues that this phenomenon, which is generally known as

inversion in wh-questions and which is most famously exemplified by the case of subject-auxiliary inversion in English must be due to different mechanisms in English and Spanish.

Goodall (2005) refers to the originality of using syntactic satiation as a diagnostic tool in investigating this phenomenon by saying that 'in doing this, I will make use of evidence that is not just new, but of a new type, in that it will be based on the phenomenon of syntactic satiation discussed in Snyder (2000)' (Goodall 2005: 3). It can be said then that this study does not only use syntactic satiation as a diagnostic tool in trying to answer questions about the inversion mechanisms employed in English and Spanish, but it is also used 'in demonstrating how the phenomenon of satiation can be put to use in the service of comparative syntax' (Goodall 2005: 3).

45 native speakers of English and 59 native speakers of Spanish, who were all university undergraduate students, took part in this experiment. All of them were presented with a set of 4 practice items and 50 experimental items with a 'situation' and a request for a *yes* or *no* judgment as in this example:

'Situation: Alice will write a letter at home.

Test sentence: What will Alice write at home?

Does this sound good?

Yes   No   (circle one)'   (Goodall 2005: 9-10)

Goodall explains that each one of the 50 experimental items consisted of 5 blocks containing 4 acceptable and 6 unacceptable sentences each. He presented every item on a separate page to avoid an equalizing strategy and to prevent participants from comparing their responses for particular items. The subjects were also given

instructions to give their initial responses and other instructions to prevent them from imitating their previous responses. The participants were presented with six types of unacceptable sentence types with the types presented to Spanish speakers largely similar to those for English speakers. These types were: no inversion, subject-islands, complex NP constraint, adjunct island, left-branch and double psych-fronting.

Goodall (2005: 12) decided that a sentence type would be assumed to have induced satiation among subjects if 'a subject [who] initially gives a *no* response, switches to a *yes* response at some point, and then consistently responds *yes* thereafter' (ibid: 12). The findings of this study confirmed the main findings of Snyder (2000). They are similar to Snyder's findings in that 'they show that satiation can indeed be induced experimentally, that not all sentence types are susceptible, and more specifically, that the complex NP constraint is one of the types that is susceptible (at least) for English speakers' (Goodall 2005: 19-20). The only difference between the findings of the two studies concerns subject island violations 'where Snyder found marginally significant satiation effects, a result that was not replicated here' (Goodall 2005:20).

Goodall (2005:13) discusses similarities and the differences between the results of his study and Snyder's study by saying that 'as in Snyder (2000), there is a significant satiation effect for the Complex NP Constraint, but not for the other violations'. However, unlike Snyder (2000), there is not even a marginally significant effect for subject island violations and there is no satiation effect for the No- inversion sentence type. On the other hand, 'there is a significant satiation effect for the No-inversion sentence type in Spanish. There is a trend in the Subject Island, complex NP constraint, and double psych-fronting sentence types, but none approaches significance'. However, Goodall may be making some problematic assumptions here.

The fact that Spanish and English are quite different does not mean that the mechanisms are not the same.

Concerning the main aim of Goodall's study which is finding an answer to the inquiry about the similarity of the wh-inversion mechanisms in English and Spanish, the study comes to a specific conclusion as 'it is shown that unacceptable wh-questions in Spanish are susceptible to satiation, but their counterparts in English are not' (Goodall 2005: 2). His results indicated that 'satiation obtains in the case of the Complex NP constraint for English speakers and in the case of No inversion for Spanish speakers' (Goodall 2005: 14). The results of this study showed that 'initially unacceptable wh-questions without inversion appear to differ in English and Spanish with respect to the stability of judgments upon repeated exposure, with evidence for increasing acceptability only in Spanish' (p. 20). This leads Goodall to conclude that 'different mechanisms are responsible for the inversion effect in the two languages' (Goodall 2005: 2). This conclusion suggests that satiation can be a useful tool and a new source of evidence in comparative syntax as it is used here to compare the acceptability of a sentence type in two or more languages.

With regard to the experimental investigation of satiation more generally, the results reported here confirm the basic findings of Snyder (2000) in showing that satiation can indeed be induced experimentally and that not all sentence types are susceptible. The only conflict concerns subject island violations where Snyder had found marginally significant satiation effects while Goodal's study found none.

3.2.4 Sprouse (2007) and Luka & Barsalou (2005)

Sprouse has carried out a number of studies concerning the phenomenon of syntactic satiation. One of these studies Sprouse (2007) focuses on the relationship between syntactic satiation and syntactic priming. He refers to syntactic priming as 'one of the

extra-grammatical factors that affect acceptability' (2007: 124). In this study, he replies to a previous study on syntactic priming carried out by Luka & Barsalou (2005) in which they 'found that exposure to structures in a reading task increases the acceptability of those structures in a subsequent rating task' (Sprouse 2007: 124). Luka & Barsalou (2005) refer to a syntactic priming effect for grammatical structures as they notice that 'participants rated sentences as more grammatical if they had read them earlier' (p. 436).

The main idea of Luka & Barsalou (2005) is that there are different sources of acceptability rating violations (i.e syntactic satiation). This notion gives evidence on Snyder's (2000) suggestion that satiating and nonsatiating violations have entirely different sources within the language faculty. Syntactic priming is 'the facilitation of a given structure through previous exposure to that structure' (Sprouse 2009: 330). Thus, 'exposure to structures in a reading task leads to higher acceptability in a rating task' which leads to the conclusion that 'satiation might just be a token of syntactic priming' (Sprouse 2009: 330).

Sprouse (2007) illustrates that Luka & Barsalou (2005) demonstrate a syntactic priming effect for grammatical structures only. He argues that there is evidence for a syntactic priming effect for ungrammatical structures in Snyder (2000). 'Snyder presents evidence with two ungrammatical structures [which are] (wh-islands and Complex NP constraints islands) in a Yes/No acceptability task' (Sprouse 2007: 125). In this study, Sprouse (2007) explores 'theories of categorical grammaticality [which] predict that ungrammatical sentences will not be affected by syntactic priming' (p.125).

Sprouse's study (2007) is based on four experiments conducted to test each of the following four island violations:

'Subject-island: who do you think the email from is on the computer?

Adjunct-island: who did you leave the party because Mary kissed?

Wh-island: who do you wonder whether Susan met?

CNPC Island: who did you hear the rumour that David likes?' (Sprouse 2007:125)

In analysing the results of his experiment, Sprouse assumed that 'a syntactic priming effect would result in an upward trend in acceptability' (Sprouse 2007: 128). These results suggest that there is no syntactic priming effect on acceptability of ungrammatical structures which contrasts with the findings of Snyder (2000) who has noticed such an effect with ungrammatical structures. However, this result adds a new dimension to the findings of Luka & Barsalou (2005) which were similar to the findings of Sprouse (2007) as it brought evidence for syntactic priming of grammatical structures.

Sprouse (2007:128) explains that categorical grammaticality predicts that 'some extra-grammatical effects on acceptability may be asymmetrical, affecting grammatical structures but not ungrammatical structures'. He clarifies that one such factor could be a syntactic priming effect so that categorical grammaticality predicts such an effect for grammatical but not ungrammatical structures. Sprouse (2007) says that categorical grammaticality makes this assumption depending on the idea that 'the priming effect is predicated upon the existence of a licit presentation' and because 'ungrammatical structures have no licit representation, categorical grammaticality predicts that there should be no syntactic priming effect for ungrammatical structures' (Sprouse 2007: 128). It can be said then that the findings of this study provide support for categorical grammaticality as it found no syntactic priming effect for ungrammatical structures.

3.2.5 Sprouse (2009)

Myers (2012: 453) explains that Sprouse (2009) 'has cast some doubt on the replicability of satiation' and this uncertainty is the outcome of 'observing that some results find it and others do not, depending on the type of grammatical violations and the task'. In this study, Sprouse replies to the results of Snyder (2000), which is the original satiation study, by hypothesizing that 'the satiation effect reported in Snyder 2000 is the result of a response strategy in which participants attempt to equalize the number of *yes* and *no* responses' (Sprouse 2009: 329). He explains that this strategy was 'enabled by the design features of Snyder's original experiment' (Sprouse 2009: 329).

In this article, Sprouse (2009) refers to the fact that 'in the years since Snyder's original study, the results of satiation studies have yielded mixed results- a situation I will call *the replication problem*' (ibid: 330). He re-examines satiation by presenting nine experiments by means of which he tries to study satiation 'in light of the replication problem, suggesting instead that the satiation effects reported in Snyder 2000 may derive from a response strategy' (Sprouse 2009: 330).

Sprouse (2009: 329) explains the phenomenon where 'some unacceptable sentences begin to sound more acceptable after days or weeks of repeatedly judging their acceptability' have sometimes been used by critics of the use of acceptability judgments as 'evidence of the instability of the data underlying syntactic theories'. He refers to the idea that Snyder (2000) hypothesized that 'if instability is an inherent property of judgments, and not just a symptom of ''doing linguistics'', then non-linguists should exhibit it as well' (Sprouse 2009:329). Furthermore, if this instability appears in one type of unacceptable sentences and not in others, then instability could be a property of specific structures or constraints, and not the judgement process.

The response strategy which Sprouse presents as a result of some design strategies Snyder (2000) employed in designing his questionnaires, is an equalization strategy in which the subjects attempt to equalize the number of times they give each of the two responses (i.e *yes* or *no*) in grammaticality judgment tasks. 'So if most of the sentences in the experiment are ungrammatical, participants will attempt to counter their earlier *no* responses by increasing their *yes* responses later on' (Myers 2012: 453). Sprouse argues that this strategy comes as a result of two design features of Snyder's original experiment. This first feature is that 'the task offered only two response choices (*yes* and *no*) [and the second is that] the design included significantly more unacceptable sentences than acceptable sentences' (Sprouse 2009:330).

In this study, Sprouse presents nine experiments which were designed to differentiate between 'an analysis in which satiation is an effect of the equalization strategy and an analysis in which it is an inherent property of violations as suggested by Snyder (2000)' (Sprouse 2009: 330). The results of these experiments lead him to conclude that 'satiation is a task effect' (Sprouse 2009: 332). He explains this point of view by saying that 'the equalization strategy is a task-related response, while satiation is (presumably) a reflex of the architecture of the language faculty'. He adds that 'failure to replicate casts doubt on the view that satiation is a direct reflex of the language faculty. Therefore, the replication problem is evidence in favour of the equalization strategy' (Sprouse 2009: 333). Francom (2009: 20) explains that this assumption made by Sprouse is based on 'a series of replication studies in which no satiation effects are found in balanced designs, and [consequently] he proposes that satiation effect reflects a task-based strategy'. Sprouse (2009: 340) presents two explanations of the fact that in the results of his experiments there were no signs of syntactic satiation effects. These explanations are 'the equalization strategy explanation

and the satiation-is-rare explanation [and both of them] suggest that satiation 'effects are not an inherent property of violations'.

Francom (2009: 21) describes Sprouse's proposal as a 'counter proposal' because it changes satiation from being 'a processing phenomenon' to become 'an artefact of the particular design conditions typically employed in satiation studies'. However, Sprouse (2009: 339) himself refers to the partial indications of these results by explaining that 'it is predicated upon not finding an effect-in other words, on null results'. He explains that lack of evidence for an effect is not evidence for the lack of the effect. He clarifies that further by saying that in this case, 'the lack of satiation effect in these experiments does not necessarily indicate that satiation does not exist'.

3.2.6 Francom (2009)

The main goal of this study as expressed by Francom (2009: 11) is that it 'explores the nature of linguistic introspection and the psychological factors that conspire to affect acceptability judgments'. He mentions three main aims of his study: '1) to explore evidence for the syntactic satiation effect and its source, 2) to assess the claim that satiation effects highlight gains of the experimental syntax program and 3) to further contribute to understanding of the nature of linguistic introspection and the relationship between grammaticality and acceptability'(Francom 2009: 96).

Francom explains that the findings of Snyder (2000) about 'rating improvement or satiation' were taken as evidence that 'the surface unacceptability of some anomalous sentences is not due to syntactic constraint'. Instead, it was suggested that it comes as a result of 'performance limitations related to working memory limitations' (Francom 2009:12). Francom proposes that if this assumption is correct, then 'data from rating change provide syntacticians with another angle from which to assess the grammatical status of structures'. In addition, the use of this kind of data has 'a further

advantage of employing experimental techniques for syntactic investigation' (Francom 2009: 12).

In this study, Francom assumes that this kind of data which comes as a result of rating improvement (satiation) can be used to find an answer to another concern which is 'to what extent does rating change as a function of exposure provide new data on the underlying grammatical status of syntactic structure?' (Francom 2009: 12). Moreover, he tries in this study 'to provide a detailed investigation into the potential source of rating change in satiation studies'. Furthermore, another aim of Francom's study is to explore to what extent 'experimental approaches to acceptability judgment tasks provide a clear view into the structure of tacit knowledge' (Francom 2009: 18-19).

In the findings of the five experiments that he designs in this study, Francom (2009) tries also to find answers to some of the research questions raised in previous syntactic studies. He tries to test the assumption made by Sprouse (2009) that 'satiation effects are not linguistically-based, but rather essentially task-based' (Francom 2009: 19). He explains that the findings of his first experiment do not find a clear answer for the inquiry about whether satiation effects are linguistically-based or task-based phenomena. On the other hand, the results of the experiments 2 and 3 provide evidence against Sprouse's proposal because in these experiments, 'satiation does occur in balanced task designs' (Francom 2009: 20). Nevertheless, Francom (2009) says that 'robust evidence supporting the sentence processing claims for satiation is not found' (p.19) either. This result does not provide evidence that satiation is a linguistically-based phenomenon.

Another concern which takes place in this study by Francom (2009: 50) is the one raised in Sprouse (2007) and Luka & Barsalou (2005) about the relationship between syntactic satiation and syntactic priming. 'Is syntactic satiation an instance of syntactic

priming?'. He raises this as an important question concerning the relationship between the two terms. Francom (2009: 98) observes that 'mere exposure is not the underlying source of satiation effect' which is similar to the claim of Luka & Barsalou (2005: 45)that there is 'a general lack of evidence for priming of anomalous [ungrammatical] syntactic structures'. It was mentioned earlier when presenting the study of Sprouse (2007) that it found 'no syntactic priming effect for ungrammatical structures' (Sprouse 2007: 133). In general, Francom (2009: 50) points out that there is a similarity between syntactic satiation and syntactic priming in that 'both effects include repeated exposure to syntactic structures as a key aspect of the phenomenon'.

The results from Francom (2009:96) provide further evidence in support of Snyder (2000) in that these results show that 'low initial acceptability for satiating sentence types stems from working memory demands and not syntactic constraints'. This result is based on the noticed distinction made between the different types of violations that he used in his experiments. He classifies the violations that he tested into two groups. The first group contains *whether*-island and *subject*-island which 'consistently show rating improvement in multiple experiments'. The second group which contains *Adjunct* islands, *Left Branch* and *That-trace* violations which 'do not show effects in any of the tasks' in this study. Francom (2009: 96) describes this as the 'striking contrast between 'weak' and 'strong' violations' as it was noticed that 'to some extent satiating types appear to be more readily 'correctable' and/or 'interpretable' than non-satiating types'. Goodall (2014) explains that weak islands are 'those in which acceptability of an argument gap is much higher than that of an adjunct gap' and *strong* islands are 'those in which argument gaps and adjunct gaps are equally unacceptable'

Francom (2009:20) explains that the results from the five experiments he did as a part of his study are similar to the findings of the previous studies as they come to the

conclusion that 'satiation effects are replicable in rating tasks'. He makes a comparison between the different findings of the previous satiation studies and concludes that 'the effect is not an across-the-board phenomenon; satiation did not occur for all sentence types equally, which suggests that the effect is related to something more than just experimental design' (Crawford 2012: 39-40). Concerning the inquiry about the source of the satiation effect, Francom (2009: 20) does not find an exact answer to it as he says that 'evidence gathered cannot exclude the possibility that memory limitations, syntactic priming or test taking strategies play some role in satiation effect'.

3.2.7 Crawford (2012)

Crawford (2012: 38) draws attention to the fact that 'the results for subject island violations have been most variable' in the findings of the previous satiation studies. She notices that 'while some experimental studies have found that participants satiate on subject islands (Hiramatsu 2000, Francom 2009), others have only found marginal to no effects (Snyder 2000, Sprouse 2009)'. Crawford (2012: 38) explains that this study aims to examine 'the replication of satiation effects for *whether* adjunct and 3 types of subject islands'.

The participants of this study were undergraduate monolingual English speakers in the Boston area. They were asked to give judgments on a total of 70 items in a computer based rating task with a scale from 1 to 7. Crawford arranged the test items in 7 blocks of 10 sentences each. These 10 sentences were equally divided so that they included 5 grammatical fillers and 5 ungrammatical test items. The 5 ungrammatical test items included 1 adjunct- island, 1 *whether*- island, 1 transitive subject- island, 1 unaccusative subject- island and 1 unergative subject -island. The study investigates whether satiation effects can be replicated in a balanced design. It also aims to investigate the extent to which satiation effects can be replicated and 'if subject islands

satiated when extraction site and predicate type were controlled for' (Crawford 2012:43).

The findings of this experiment have shown both similar results and different results to previous satiation studies. Crawford (2012:38) says that as a result of 'replicating all studies, except Sprouse (2009), I find satiation effect in a balanced design for *whether* islands'. She describes this as a 'significant satiation for *whether* islands' (p.43). However, her results are not similar to Hiramatsu (2000) and Francom (2009) in that she does not find satiation effects 'for any of the subject island types tested' (Crawford 2012: 38). These results provide further evidence that satiation can be induced experimentally as she uses a computer based balanced task in her study.

Concerning the notion of the relationship between syntactic satiation and syntactic priming, Crawford (2012:44) says that 'satiation did not affect all sentence types equally... [Which] argues against the idea that satiation is an instance of syntactic priming'. It can be concluded then that the outcomes of this study 'provide evidence against a syntactic priming explanation for satiation effects'.

3.2.8 Myers (2012)

Myers (2012: 453) refers to the phenomenon of syntactic satiation as an 'independent way to distinguish grammar from processing'. He explains this idea by stating that grammatical knowledge should be stable over the course of an experiment, but it was noticed in satiation studies that it is changeable. He says 'but processing, by its very nature, fluctuates considerably; the processing of one sentence readily exerts influence on the processing of a later one (Luka & Barsalou 2005)' (Myers 2012: 453). Myers explains that Snyder (2000) suggests using satiation as a useful diagnostic tool depending on the fact that intuitions are changeable which means that satiation 'reflects limitations on sentence processing rather than competence'..

Myers (2012: 453) criticises the findings of Sprouse (2009) which presents the idea that 'satiation is caused by speakers attempting to balance the number of 'yes' and 'no' responses in a syntactic judgment experiment'. Myers argues against this idea by saying that this explanation for satiation 'fails to explain why acceptability judgment shifts can also happen with gradient judgment scales, not just binary Yes/No scales, and can involve a reduction, not just an increase in acceptability (anti-satiation)'.

In his study, Myers (2012: 456) focuses on the presentation order as a factor of the experiment design. He explains that by observing 'the interaction between order and the [experimental] factors, we can see how the influence of these factors on judgments changed over the course of the experiment'. He argues that if judgments for ungrammatical structures 'become more positive, this would present a case of syntactic satiation'. The results of this experiment show satiation of adjunct island violations in Chinese. This result is different from the findings of Hiramatsu (2000) who found no satiation effect of the adjunct island violations in English. This suggests that the same violation type may satiate in one language but not satiate in another.

3.2.9 Hofmeister et al. (2013)

This study uses syntactic satiation effect as a type of evidence while studying the status of syntactic island effects in grammar. Hofmeister et al. explain that, in their study, they ' weigh the adequacy of several types of evidence invoked in support of grammatical accounts of island phenomenon. These include satiation effects, the relationship between working memory and judgements of acceptability, and data from filled gap paradigms and plausibility manipulations' (Hofmeister et al., 2013: 42). The discussion here will only consider the way that they used satiation effects as evidence in their study without referring to these other types of evidence that they mention.

They explain the importance of using syntactic satiation as a type of evidence in their argument by saying that 'this phenomenon is potentially of importance in the island debate: if a particular kind of ungrammatical sentences lacks a coherent representation, then no matter how many times such a sentence is seen, judgement should remain consistently low' (Hofmeister et al., 2013: 48). They explain the way that satiation can be used as evidence in this case by saying that 'identifying the source of island effects theoretically becomes as simple as seeing whether judgements of island-violations rise throughout the course of an experiment [satiation effect]' (Hofmeister et al., 2013: 48).

In this research study, Hofmeister et al. (2013: 48) refer to the fact that 'the overall evidence regarding the effects of exposure [syntactic priming] on judgements for island-violating sentences is rather mixed'. This is based on the different results of previous studies that investigated this effect. It was mentioned earlier that Snyder (2000), Hiramatsu (2000), Francom (2009), Crawford (2012), and Myers (2012) found that judgments for several types of island-violation rise with exposure, while the results of other studies such as (Sprouse 2009) did not. Hofmeister et al. (2012:48) explain that these different explanations that aim to describe the effect of exposure as provided by the different studies 'may potentially be explained in terms of different items, different island types, different acceptability scales, different presentation methods, etc'.

On the other hand, they explain that besides the conflicting results there is a more serious problem with interpreting past results on increase with repeated exposure as 'it has never been established that judgements for difficult grammatical sentences increase with repeated exposure, but those for ungrammatical sentences do not' (Hofmeister et al., 2013: 48). They mention that Luka and Barsalou (2005) indicate that the acceptability of sentences with 'moderate grammaticality' does increase with

repeated exposure. This fact leads Hofmeister et al. (2013) to take this result as evidence which implies that 'at least some sentences with structural abnormalities become better with familiarity'. Consequently, this argument is considered as raising 'the possibility that even sentences that are uncontroversially ungrammatical might improve with exposure'

In this latter argument, Hofmeister et al. neglect a very important fact by denying any previous evidence that ungrammatical structures can improve (satiation) with exposure (priming). By doing this, they do not consider the fact that in the first study on syntactic satiation; Snyder (2000) has found evidence for a syntactic priming effect for ungrammatical structures. In this study, mentioned earlier, Snyder (2000) presents evidence based on two ungrammatical structures which are wh-islands and Complex NP constraint islands, in a Yes/No acceptability task.

For this purpose of investigating whether ungrammatical structures might improve with exposure, Hofmeister et al. (2013) conducted an acceptability experiment including 28 participants who were native speakers of English living in the United States. In their findings, they conclude that 'interpretability therefore appears to have a major role in whether some structure becomes more acceptable with repetition' (p.49). In other words, 'Hofmeister et al. (2013) report that satiation vanishes when items are made too complex' (Chaves and Dery, 2014: 96). They found that interpretable ungrammatical structures improved with exposure which means that they found a syntactic satiation effect as a result of syntactic priming of ungrammatical structures.

Accordingly, they raise an inquiry about why these ungrammatical items get better with repeated exposure and about why some structures get better with exposure and not others. More specifically, they enquire why island violations become more acceptable with exposure in some cases and not others. Their findings did not provide

clear cut answers, but they are left with the conclusion that 'a full understanding will likely involve considering a complex interplay of sentence interpretability, processing difficulty, and the relative ease with which structural anomalies can be identified and corrected' (Hofmeister et al., 2013: 50).

3.2.10 Chaves and Dery (2014)

Chaves and Dery (2014: 96) carry out two experiments in which they 'focus on the controversy surrounding the existence of satiation in Subject Island violations'. They explain that this controversy has come as a result of the fact that whereas Snyder (2000), Hiramatsu (2000), and Francom (2009) found evidence for satiation in Subject Islands, others have failed to replicate this result. Among those who have failed to find an evidence for satiation in Subject Islands, they mention (Sprouse, 2007, 2009) and Crawford (2012). Chaves and Dery (2014) did two experiments which involved native speakers of English living in the United States who participated in the two experiments online.

The results of this first experiment showed that 'presentation order was a significant predictor, suggesting that satiation occurred: participants' responses improved as a function of presentation order' (Chaves and Dery 2014: 100). This conclusion makes these results inconsistent with the conclusions of the studies that have failed to find an evidence for satiation in Subject Islands. In the second experiment, Chaves and Dery (2014) investigated the argument made by Sprouse (2009) that the satiation effects found in Snyder (2000) might be due to a confound created by an unbalanced design. In experiment 2, they 'rule out the possibility of an equalization strategy entirely, by using only grammatical sentences as distractors' (Chaves and Dery 2014: 101). They explain the effect of this choice by suggesting that 'if all the distractor items are grammatical, then an equalization strategy would cause ratings for subject islands to gradually decrease as the experiment progresses' (p.101).

The results of their second experiment 'replicated the results of experiment 1 and revealed that subject islands with specific *wh*-phrases were more acceptable than those with unspecific *wh*-phrases' Moreover, their results give evidence for the argument raised by Sprouse (2009) about the idea that satiation is a task-based phenomenon caused by the order of presentation. (Chaves and Dery 2014: 102) mention that 'Presentation order was a significant predictor, suggesting that satiation still occurred: participants' responses improved as a function of presentation order' (Chaves and Dery 2014: 102). At the end of their study, Chaves and Dery (2014: 104) suggest that the results of their experiments indicate that 'Subject Islands can reliably satiate, regardless of the predicate type and regardless of the specificity of the *wh*-phrase. These findings support the conclusions of Snyder (2000), Hiramatsu (1999, 2000), and Francom (2009)'. They explain that the failure to find satiation with subject islands that are reported by Sprouse (2009) and Crawford (2012) 'must be attributable to some other factor, specific to such experiments. We conjecture that Subject Island violations do not satiate when the experimental items are too complex'. In this last conclusion made by Chaves and Dery (2014), they agree with the previous findings of Hofmeister et al. (2013) that complexity has an effect on satiation.

3.3 This Study

Previous studies on syntactic satiation have examined different aspects of this phenomenon and have come to different results. The main areas focused on have been the nature and the reliability of acceptability judgments and comparisons between languages. One common aspect of these studies is that they examined satiation effects with native speakers of English or sometimes of other languages such as Spanish and Chinese. Goodall (2005) used syntactic satiation as a tool in comparative syntax to make a comparison between the inversion mechanisms employed in English and

Spanish which is different from the other studies that investigated the nature of syntactic satiation and its relationship with syntactic priming.

My study uses syntactic satiation effects in a different field, exploring the possibility of using satiation effects as a diagnostic tool in the field of second language acquisition research. One assumption of this study is that evidence of syntactic satiation can be taken as an indication of the unreliability of acceptability judgements made by second language learners. Another is that they indicate instability of knowledge of second language grammar.

A first aim of this study is to look for evidence of satiation effects for second language learners. Where learners reject structures assumed to be ungrammatical, this suggests that they have gained appropriate knowledge as a result of the L2 teaching process. Where the same participants start to accept ungrammatical structures which they had refused earlier, this is taken as evidence that satiation has developed as a result of syntactic priming of ungrammatical structures (encountered in the reading phase of the experiment). This is taken as an indication of the unreliability of the acceptability judgements of L2 learners. Satiation effects are assumed to correlate inversely to some effect with the stability of acquired knowledge. The more evidence of satiation, the less stable we assume acquired knowledge to be. The amount of satiation found is then taken as evidence for or against the usefulness of particular teaching methods. Here, they are used to compare one explicit and one implicit teaching method, each of which use positive evidence only.

The results showed evidence of satiation for one group (who had been taught using the implicit method) and with one structure (adverb placement). The next chapter explains the design and administration of the study before presentation and discussion of the data in chapters 5 and 6.

The Study Administration and Design

This study was conducted in three major stages: a pre-experiment, experiment, and post-experiment stage. The data was gathered from a number of exams and acceptability judgment tasks, was used as methods of evaluation at the end of each stage. This chapter presents these different stages, the main research questions, the assumptions the study was built on and the study objectives. It also provides information on the participants, the division into different groups and some details of their participation in this research.

4.1 Research Questions

This research study was designed to answer a number of research questions:

1) To what extent does explicit teaching of L2 grammar based on the presentation of positive evidence only help adult learners in the process of parameter (re)setting?

This question is based on the idea that it will not be easy for adult L2 learners who are taught the L2 grammar explicitly, with positive evidence only, to (re)set a language parameter (the verb raising parameter here). This supposition is based on the idea that in cases when the first and the target languages have two different forms of the same parameter, explicit instructions will not help L2 learners who speak a language in which verbs raise to know that these verbs do not raise in the target language. With the teaching method used here, this is supposed to happen when they are provided with positive evidence only; i.e. without telling them that structures in which verbs raise are

not grammatical in the target language. This kind of teaching will not be useful in this case because the teaching process is based on presenting what is grammatical in the target language without explaining how such forms can be ungrammatical. This argument is presented by White (1991a, 1991b) who argues that L2 learners who have adopted L1 parameter setting which permits verb raising over an adverb will need to have much explanation and that negative evidence is required to show that such structures are not grammatical in English.

2) Is knowledge of the target language grammar which comes as a result of this kind of teaching stable? To what extent can such knowledge change as a result of repeated exposure to ungrammatical primes (syntactic priming)?

3) Does syntactic satiation happen as a result of syntactic priming of ungrammatical structures in this case?

This study investigates the idea that when L2 learners are not told that it is not grammatical for verbs to raise in English, they may start to accept forms in which verbs raise, such as *Mary helps often her mother*, as a result of repeated exposure to them. In other words, one question was whether those learners would start to accept forms they had rejected earlier (syntactic satiation) as a result of repeated exposure to such structures in reading tasks (syntactic priming). Syntactic satiation was used in this study as a diagnostic tool to test the kind of knowledge that L2 learners acquire as a result of positive evidence only explicit teaching. It is assumed that if syntactic satiation happens as a result of syntactic priming, this means that the knowledge of L2 grammar is not stable.

4) Can acceptability judgment tasks be considered as a reliable source of data in second language acquisition research?

If the results of such tasks are similar to the results of the standardised grammar exams, this suggests that acceptability judgment tasks can be a reliable source of data in this

field of study. However, syntactic satiation effects, if noticed, would be considered as evidence against the reliability of acceptability judgment tasks as a source of data in SLA research. This is because such results would suggest that second language learners change their previous judgements (satiation) which means that their judgements are not stable.

4.2 The Research Objectives

This study aims to:

1) Evaluate the usefulness of explicit grammar teaching as a method of teaching English as a second language. This method involves explicit teaching, which focuses on positive evidence and does not present students with negative evidence. The usefulness of this method is evaluated with regard to how much it can help learners in a parameter (re)setting process.

2) Test the robustness of the knowledge second language learners acquire as a result of this method. The study was designed to test whether syntactic priming of ungrammatical structures, which were not presented as being ungrammatical in the classroom, could change the acceptability judgments of L2 learners.

3) Provide evidence of the usefulness of experimental syntax in second language acquisition research.

4) Provide evidence of whether acceptability judgment tasks can be considered a reliable source of data in this field.

4.3 The Participants

There were three groups of participants included in this study. The subjects of the first two groups were university level Libyan students studying in the department of Media at Misurata University in Misurata , Libya. The third group is a group of native

speakers of English living in London. All were undergraduate students at Middlesex University in London. The Libyan students were studying in the Department of Media at Misurata University and were chosen as they were studying English as one of the general subjects included in the teaching programme of the university. There was a need for a teacher of English in this department in the beginning of the academic year 2011-2012 which is why this department was selected.

Ethical approval for the research was obtained from the Head of the Department of English Language as Misurata University (Appendix 1) and from Middlesex University (Appendix 3). Each participant provided written consent by means of a form (Appendix 2). All the participants were informed that they could withdraw from the study at any time.

The Libyan participants were divided into two groups: one group was taught according to the explicit principles of the Grammar Translation method, which is widely used in Libya, and another group was taught the same grammar topics implicitly according to the principles of the Direct method. This was done as an important step in conducting experiments as mentioned by Larsen-Freeman and Long (1991: 21) who explained that '..., experiments have two criteria: (1) there are at least two groups included in the study;... and (2) the subjects are randomly assigned to one of these groups'

Larsen –Freeman and Long (1991: 21) explain the purpose of having two groups in an experimental study by saying that 'if one group is treated in one manner and another in a different manner and their post-treatment behaviour differs, we can conclude that the behaviour differs as a consequence of their different treatment'. The two groups here would provide evidence of the relative effectiveness of each teaching method. The Direct method was chosen for the second group because it was developed

as a response to the Grammar Translation Method (Larsen-Freeman 1986, Richards and Rodgers 1986). As explained by Larsen-Freeman (1986) and Richards and Rodgers (1986), it focuses on teaching the second language with no explicit instructions but through demonstration and context.

The two groups were small with just ten participants each. The reason for the small numbers was that these were all the students who studied in the Department of Media when the study was conducted. It was intended to have more subjects but these were the only students who were available and who participated during the different stages of the experiment. As Bley-Vroman and Masterson (1989: 234) point out 'in second language acquisition research, subject groups will often have to be small'. The random choice of the subjects was done because 'random group assignment allows the researcher to assume that they have truly comparable groups at the outset of the experiment' (Larsen-Freeman and Long 1991: 21).

Groups 1 and 2 were divided into two subgroups: 1A and 1B and 2A and 2B. This was done so that all the exams and the acceptability judgment tasks could be presented in two versions with two different orders of presentation of the same stimuli. This counterbalancing procedure was carried out to eliminate any effects of the order of presentation that may affect the performance of the participants on the tests and the acceptability judgment tasks.

The third group was a control group of native speakers of English living in London. The participants in this group were included to consider their judgments as a model of the 'correct' judgments given by native speakers of English language. These native speakers' judgements were employed as the basis on which the comparison between the two groups of the Libyan participants was made. This procedure was intended to help in determining which of the two groups of the L2 learners who were

included in the study would have judgments similar to those given by the native speakers. This group of native speakers was included in the experiment because it is a 'common practice in most experimental studies in L2 research... a control group of NSs serves as the basis for the comparison' (Sorace 1996: 385).

The participants in this control group were chosen from the students of Middlesex University who were similar to the Libyan participants in age. They were asked to give their spontaneous immediate reactions to items in the two acceptability judgment tasks (Appendices 6 and 7), and every participant was provided with an information sheet (Appendix 2) that explained the purpose of his/her participation. The participants in this group were given the two tasks in the two different versions of every task before they were given to the Libyan subjects. Presenting two different versions aims to eliminate the effect of the order of presentation as explained previously. 20 English students who speak English as their mother tongue participated in this study and their judgments were used as 'model answers' in comparing the judgments of the groups of Libyan participants so that the Libyan responses were considered by comparing them to native speakers' responses. The judgments given by the participants in this group are presented in section 5.2.1.

4.4 The Study Stages

As mentioned above, this study was conducted in three stages: a pre-experiment, experiment, and post experiment stage. All these stages are included in the teaching plan and syllabus in Appendix 4. This teaching plan shows the topics and lessons that were presented during the teaching and the reading phases of the experiment. The plan also shows the sequence of the lessons and the time allowed for every session.

4.4.1 Pre-experiment stage

This was carried out to assess the participants' proficiency levels before the experiment. It took place at the beginning of the academic year 2011-2012 (in December 2011). A formative language test was used (Appendix 5) for this pre-experiment evaluation to measure the participants' proficiency levels. According to Gas and Selinker (1994: 32), 'standardized language tests are often used as gauges for measuring proficiency levels'. This evaluation was designed to take place before the teaching process in order to evaluate the benefit that the participants might get from the teaching. Bachman (2004: 166) refers to the usefulness of this procedure when explaining that a researcher 'might want to use a language proficiency test before and after an experimental treatment as a criterion measure of language learning'. This is what was done in this experiment, as the participants were assessed after the teaching phase to make a comparison between their responses before and after the teaching process.

This pre-experiment exam contained a number of questions which were used as distracter items in order to prevent the participants from paying attention to what was tested and what was the real purpose of this experiment. Only the answers to questions 1, 3 and 4 were considered in the data analysis because they tested the subjects' knowledge in adverb placement and Yes/No question formation, i.e. in the topics that were taken in this study to reflect knowledge about characteristics of the verb raising parameter in English. Some sentences that contain the verb *to be* which is a raising verb in English, were not included in the data analysis which focused on sentences that contained non-raising main verbs. The results from the participants in this exam are presented in section 5.1.

A number of issues were considered in designing this introductory test as well as the other tests and the acceptability judgment tasks used in this study. Shohamy (1994:

133) refers to the important role of language testing in SLA research 'where language tests are used as tools for collecting language data in order to answer and test SLA research questions and hypotheses'. The important role of language tests is also mentioned by Bachman (1990: 68-69) who refers to the various uses of language tests in studies of second language acquisition which 'often require indicators of the amount of language acquired...and these indicators frequently include language tests'.

In designing these tests, some attempt was made to reduce the possibility that other factors might affect the performance of the participants. One consideration was to make sure to give participants enough time to answer the exam questions, since shortage of time could be a factor which would influence performance. This was noted by Hamp-Lyons (1996: 154) who explains that 'it has often been claimed that speeded tests disadvantage ESL learners'. Counterbalancing was used to make sure there were no order effects in the administration of exams and acceptability judgment tasks. This counterbalancing was done in order to prevent any effect of the order of presentation on the participants' responses. Every group was divided into two subgroups and every subgroup had one of the two versions of the tests. Hence the participants did not see the material in the same order. As Brown (1998: 98-99) points out, this procedure is one method of increasing test reliability. He explains that reliability can be 'estimated by administrating two equivalent tests (say forms A and B of a test) to one group of the subjects' and by reliability he means 'the extent to which the results can be considered consistent or stable'.

4.4.2 Experiment stage

The next stage of the study, the experiment stage, started immediately after the proficiency of the participants had been evaluated. This stage was divided into three phases: teaching, testing and reading.

4.4.2.1 Teaching

The teaching period of the experiment took place over eight weeks from December 2011 to February 2012. As mentioned earlier, one of the aims of this research was to test the usefulness of explicit teaching of L2 grammar using positive evidence only, and to explore to what extent this kind of teaching can help in the parameter (re)setting process. The two groups of participants were taught the same material in the syllabus (Appendix 4) which was designed especially for this study, but using two different teaching methods. The syllabus was designed according to the standards that have to be taught to the students who study English as a general subject in Misurata University. The syllabus design process also considered the needs of this study as it paid attention to two specific grammar topics: adverb placement and Yes/No question formation. These two topics involve the learners' knowledge of the verb raising parameter in English.

With Group 1 (the Grammar Translation group), the grammar material was taught explicitly with lots of examples and drills. This teaching did not consider negative evidence about adverb placement and Yes/No question formation in English. For example, it was explained that sentences like *Mary often helps her mother* is grammatical in English, but not mentioned that **Mary helps often her mother* (in which the verb raises to I) is not grammatical in English (see section 2.2.2 figure 2). Similarly, many examples such as *Does Mary help her mother?* were taught without explaining that **Helps Mary her mother?* is not grammatically correct in English (section 2.2.2 figure 4). These target topics were taught among other topics required by the university (which were used as filler items to disguise the purpose of the experiment).

Group 2, were taught using the Direct method. This involved presenting the grammar topics implicitly with a focus on listening and speaking activities to teach grammar inductively. As with Group1, it was not stated that structures such as **Mary*

helps often her mother and **Helps Mary her mother?* are not grammatical in English

(Figure 2 and 4 section 2.2.2). As explained above, the aim was to compare the

performance of the participants in the two groups and consider which method seemed

to be most effective in this context.

4.4.2.2 Testing

After finishing the teaching process, the participants' knowledge was tested to see how

effective the teaching process had been in building their grammatical knowledge. The

participants in the two groups were tested using Exam 2 (Appendix 6) after the teaching

process and this exam was carried out in week 10 at the end of February 2012. The

grammatical intuitions of the participants were also tested by acceptability judgment

task 1(Appendix 6) which was carried alongside. The results of this testing process are

presented in section 5.2 in the next chapter. This analysis also included a comparison

between performance on the formative test and performance on the acceptability

judgement tasks to see whether these tasks reflect the L2 grammatical knowledge in a

similar way to the formative tests.

In the acceptability judgment tasks, participants were instructed to give their

opinions on whether they thought structures were acceptable or not. This is the

procedure that is used in 'most experiments [which] ask the subject to indicate whether

sentences are ''good'' or ''acceptable'' rather than grammatical' (Munnich et al. 1994:

229). These tasks were also presented in two different orders to minimise the possibility

of effects of order of presentation on the responses given by the participants. The two

acceptability judgement tasks that were included in this study were designed in the

single sentence format in which 'each sentence is judged individually and

consecutively, without reference to a paired' (Birdsong 1989: 123). The advantage of

using such a format is that it allows for judging of each structure without connecting it

to another structure which can lead to 'minimally varying counterpart [and] more spontaneous responses may be expected' (Birdsong 1989: 123).

The first task was used at this post teaching evaluation stage, and the second task was used later in the post-experiment stage. The two tasks consist of 24 sentences, among which there are some sentences that contain unrelated items, i.e. sentences that were not Yes/No questions or that did not test the participants' intuitions about adverb placement. There are also some dummy sentences which contained the verb *to be* which is a raising verb in English and is different from the main verbs which do not raise. This was done to disguise the real target forms 'by introducing distracter items containing material irrelevant for the test' (Sharwood- Smith 1994: 79). The advantage of this procedure is explained by Birdsong (1989: 122) who suggested that 'when the investigator wishes to elicit spontaneous unadjusted responses, it may be desirable to prevent subjects from recognizing this focus'. For this reason, the acceptability judgement tasks that were used in this study included some distracters.

In designing these tasks, there was an attempt to include equal numbers of grammatical and ungrammatical items to avoid the effects of an 'equalization strategy' (Sprouse 2009: 330). Sprouse explains that this is 'a response strategy in which participants attempt to equalize the number of times they give each possible response'. For this reason, these tasks are balanced so that the ratio of acceptable sentences to unacceptable sentences is 1:1 which means that the numbers of *yes* or *no* responses are already balanced so that the participants are less likely to attempt to equalize the numbers of *yes* and *no* responses.

Another consideration in designing these tasks was to make sure that they did not contain structures that could be hard to parse because they were too long, too complex or contained vocabulary that would be too difficult for the participants. Schütze (1996:

163) refers to 'parsability' as a task-related factor which may affect results as the participants tend to judge structures as unacceptable in cases when they do not understand these structures. He explains this by saying that 'due to parsing failure, our initial judgments tend to be negative'.

4.4.2.3 Reading

The reading stage started after the participants had been taught the target topics and their knowledge had been assessed to evaluate the effectiveness of this teaching. The reading stage lasted for six weeks during March and April 2012. In this stage, the participants in the two groups were presented with a number of reading tasks containing ungrammatical English sentences in which main verbs raise to I such as the sentences *Mary helps often her mother* and *Helps Mary her mother?* As mentioned above, such sentences had not been presented as ungrammatical during the teaching process.

Such ungrammatical structures were presented repeatedly in a number of reading tasks (Appendix 10), which contained material and information related to the field which the participants were studying at university, including topics about journalism and TV reports which students studying in the Media Department are interested in. One purpose of choosing such reading tasks was a response to the regulations of the university which recommend that module tutors of English present related English terminology and information. The second purpose was again to disguise the target structures, so that participants would not realise the focus and target of the study.

The ungrammatical structures were embedded in the reading tasks so that the students would not know that they were put for a purpose. None of the students questioned the grammaticality of the structures presented in the reading texts during the reading stage. However, some students reported later that they suspected the grammaticality of some structures, especially the ungrammatical Yes/No questions,

which could be problematic. Under-reporting at first might have happened because students felt shy or not confident enough to express their doubts.

Introducing such ungrammatical structures repeatedly in a number of reading texts was designed to investigate whether participants would start to prime these ungrammatical structures as a result of repeated exposure, despite the information they had been given earlier during the teaching process. Psycholinguistic literature (e.g. Bock 1986) provides evidence for syntactic priming arising from the tendency to repeat structures. Sprouse (2007: 124) explains that 'syntactic priming is the facilitation of a structure through positive exposure to that structure'. Luka and Barsalou's (2005) study provides evidence of syntactic priming effect for grammatical structures, but in their study 'ungrammatical sentences could not be presented to the subjects during the reading phase' (Sprouse 2007: 124).

The difference in this study is that it presented ungrammatical items during the reading phase to test whether such structures would be primed and, if so, whether this would lead the participants (who had rejected them in acceptability judgment task 1 immediately after the teaching phase) to change their judgements and start to accept them later in acceptability judgment task 2. This is the syntactic satiation effect. The purpose behind this was to test for a syntactic priming effect from exposure to ungrammatical structures.

4.4.3 Post- Experiment Stage

This was the final stage of the experiment which took place at the end of April 2012, immediately after the reading phase had finished. At this stage, participants were tested again to see whether their responses to Exam 3 and acceptability judgement task 2 (Appendix 7) would be different from their earlier responses to Exam 2 and acceptability judgement task1 (which took place before the reading phase). This was designed to investigate whether they would start to accept structures that they had

rejected in the previous acceptability judgement task, which would be taken as evidence of syntactic satiation. This also tested whether syntactic satiation can occur as a result of the syntactic priming of ungrammatical structures in reading texts. The study assumed that if such an effect happens, this will be considered as evidence that the positive explicit L2 grammar teaching does not build a stable, unchangeable knowledge of L2 grammar.

Two further exams were used later in May and at the beginning of June 2012, (Exams 4 and 5 in Appendix 8 and Appendix 9) to evaluate the general knowledge of the subjects after the experiment. The results of these two exams are presented and discussed in section 5.3. After finishing the tests, it was explained to the subjects in weeks 26 and 27 that some of the structures that had been included in the reading tasks were ungrammatical and an explanation was also given of the reasons for using them. This step was done to make sure that the knowledge of the learners would not be affected by these ungrammatical structures after the experiment.

After this post-experiment stage, the data analysis phase of the study started. This was spent marking the participants' responses to evaluate their performance in the exams and the acceptability judgment tasks during the different stages of the experiment. The data are presented in the following chapter.

Data Presentation

In this chapter, the results of the participants in the formative exams and the acceptability judgment tasks that were carried out during the different stages of this study are presented. As mentioned earlier, this study is based on using the results of the participants' performances in the formative tests and the acceptability judgment tasks as data. The participants were given a score of 1 for every 'correct' answer in the tests or every 'correct' acceptance or rejection in the grammaticality judgment tasks and were given 0 for every incorrect answer.

The exams and the acceptability judgement tasks included some distracter items and questions which are not related to the purpose of the study. For example, there are some question items that contain the verb ''to be'' which is a raising verb in English and is different from the situation with the main verbs in English. However, the data analysis process included the items and the questions that are related to the purpose of the key aims of testing knowledge on adverb placement and Yes/No question formation in sentences which contain main verbs that do not raise.

After collecting the participants' scores on the target items and questions, the researcher chose the appropriate statistical test to analyse such small size groups of participants that contained 10 members each. Greene and D'Oliveira (2006) refer to the rationale for using statistical tests by explaining that they are used to measure how much variability there is in data from human behaviour. They explain that there are two main kinds of statistical tests: parametric tests and non-parametric tests. In this study, parametric t-tests were used to analyse data which are the participants' scores, as mentioned above.

The purpose of using this kind of tests was to test whether the different scores attained by the participants during the different stages of the study reflect a real difference. The advantage of using parametric *t*-tests is mentioned by Dörnyei (2007) who explains that 'if we take any two sets of scores, we are bound to find some difference in the raw scores, but we cannot automatically assume that the observed difference reflects any 'real' difference; thus, we need *t*-test statistics to check whether we got a generalized result or whether the score is likely to be merely an artefact of random variation' (2007: 215).

The choice of using parametric rather than non-parametric tests in this study was due to the fact that parametric *t*-tests seem to be more appropriate with the kind and the size of data used. Coolican (2014) explains that *t*-tests 'are a type of parametric or distribution dependent tests that depend on certain data assumptions for their results to be valid'. He refers to the importance of using this kind of parametric tests by stating that 'these tests are considered robust and more power efficient than their non-parametric equivalents...[such as] the Mann Whitney U for unrelated data and the Wilcoxon Matched Pairs (T) for related data'. Moreover, 'these non-parametric tests use ranks of the data and are considered to have on average 95.5% of the power of their parametric equivalents'(2014: p. 438).

Greene and D'Oliveira (2006) explain that there are similarities in addition to the differences between parametric and non-parametric tests. The similarities can be observed in that 'in both cases the tests analyse differences between the two experimental conditions'. Another similarity between parametric *t*-tests and non-parametric tests can be noticed in that the two kinds of tests 'use similar methods for analysing data from the same participants and data from groups of different participants' Greene and D'Oliveira (2006: p. 44). However, they also refer to the

differences between the two types of tests by illustrating that the two tests use different ways in which data are measured. 'Non-parametric tests are based on ordinal data in which scores can be ordered from the lowest score to the highest score. Scores can be ranked, giving the lowest rank to the lowest score and so until the highest rank is assigned to the highest score'. On the contrary, Greene and D'Oliveira (2006: p. 45) explain that 'parametric *t*-tests are based on interval data. Interval data are so called because the intervals between scores are considered to be equal'. This characteristic makes it possible to carry out numerical calculations instead of simply ranking the scores.

This difference between the two kinds of tests is also mentioned by Coolican (2014) who illustrates that non-parametric tests 'deal with less of the information in the data than do interval-level tests [parametric tests]'. He explains this idea by saying that 'the non-parametric tests reduce data to ordinal levels, thus losing the distance between individual positions of scores'. Consequently, 'because rank tests [non-parametric tests]do not always detect significance when a *t*-test would, they are sometimes described as being less power efficient' (2014: p. 455).

For all these reasons, the t-test was chosen to analyse data in this study. Another reason is that a t-test is appropriate for the size of data used. The study was based on small sample size groups of participants that contain 10 participants each. De Winter (2013) conducted a study to examine the usefulness of using t-tests with 'extremely small sample sizes' and the findings 'concluded that there are no principal objections to using t-tests with Ns as small as 2' (2013: p.1). The results also showed that 'a paired t-test is also feasible with extremely small sample sizes, particularly when the within-pair correlation coefficient is high' (De Winter, 2013: p. 6).

In this study, there was a sample size of 20 participants who were divided into two groups of 10 members each due to the low population within the chosen area of study. There were not many students in the department of Media in Misurata University at the time when the study was carried out so that the sample size is small. Consequently, the researcher was restricted to using only the students who were taught English at that time and only those who gave their permission to participate in this study. Hence, for the reasons given above, using t-tests was deemed appropriate for the data collected in this study.

5.1 Results of the pre-experiment evaluation exam

This exam was taken before the teaching stage in order to evaluate the participants' knowledge before any effect that might come as a result of this teaching. Only three questions were considered in this exam (Appendix 5) as they test the participants' knowledge about Yes/No question formation and adverb placement and the forth was not included as it was irrelevant to these two topics. As mentioned above, each exam was presented in two versions to the participants in the two groups of the L2 learners to avoid any effect of the order of presentation on the results.

The first question of this exam asked the participants to give their opinion about whether they think a certain sentence is 'correct' in English grammar or not. In addition to the purpose of evaluating participants' performance before the experiment, this question was also designed to give the participants some training in showing their opinion about the grammaticality of sentences before they were introduced to the acceptability judgment tasks later in the study. This question contained some dummy items (item 1 and 4 in version A of the exam) which were not included in evaluating the performance of this question and this is the procedure that is followed with the other questions.

The total average score of Group 1 in response to this question was 57.5 % ; the performance of Group 1 was better than the performance of Group 2 whose average score was 37.5%. To test for statistically-significant differences between students in the two groups on this first question (Q1) in the pre-teaching exam, an independent-samples *t*-test using the Statistical Package for Social Sciences (SPSS) was performed. In this and all subsequent tests, the level of significance was set at 0.05 ($\alpha = .05$).

As can be seen in Table 1, Levene's test for equality of variances indicated that the variances of the two student groups were not equal ($F = 2.733$; $p = .116$). In addition, the results of the t-test (Table 1) demonstrate that there is no statistically-significant difference between the students of the two groups in their mean scores on the first question in the pre-test exam ($t(18) = 18$, $p = .097$). Even though Table 2 shows clear differences in the means (*M*) and standard deviations (*SD*) between the first ($M = 57.5\%$, $SD = 20.58$) and second ($M = 37.5\%$, $SD = 29.46$) student groups, the *t*-test confirms that these differences are statistically non-significant.

Table 1: Group Statistics for students' scores on Q1 of the pre-teaching

Group	N	Mean	Standard Deviation
1	10	57.50	20.58
2	10	37.50	29.46

The second question that is included in analysis is question 3 in this pre-teaching exam ''Change into Yes/No questions''. This question is included in the data analysis as it tests the participants' prior knowledge of Yes/No questions formation. The results showed that the performance of Group 1 (52%) was better than the performance of Group 2 (28%) in answering this question too. However, the *t*-test shows that this does not reflect a statistically significant difference. Levene's test for equality of variances reveals that the variances of the two student groups are equal ($F = 5.406$; $p = .032$). Moreover, as already mentioned above, there is no statistically-

significant difference between students of the two groups in their mean scores on the third question in this pre-teaching exam ($t(18) = 1.538$, $p = .141$). Table 2 shows differences in the means and standard deviations of the first ($M = 52.00\%$, $SD = 41.31$) and second ($M = 28.00\%$, $SD = 27.00$), but the t-test shows that the observed differences are statistically non-significant.

Table 2: Group Statistics for students' Scores on Q3 of the pre-teaching exam

Group	N	Mean	Standard Deviation
1	10	52.00	41.31
2	10	28.00	26.99

The third question that is included in this pre-teaching exam is Q4 (Put the adverbs between brackets into the correct place) which is designed to test prior knowledge of adverb placement. The results were similar to the results in the previous two questions. This time Group 1 (76%) was also better than Group 2 (48%). In order to to test for statistically-significant differences between students in their mean scores on this question, an independent-samples t-test using the SPSS software was carried out. Levene's test for equality of group variances showed that the variances of the two student groups were not equal ($F = .054$; $p = .819$). The test outcomes further illustrate that there is a statistically-significant difference between students of the two groups in their mean scores on the fourth question in the pre-teaching exam ($t(18) = 2.278$, $p = .036$) in favour of students of the first group. This finding is supported with the results shown in Table 3 where it is seen that students of Group 1 have significantly higher mean ($M = 76.00\%$) than students of Groups 2 ($M = 48.00\%$).

Table 3: Statistics for Students' Scores on Q4 of the pre-teaching exam.

Group	N	Mean	Standard Deviation
1	10	76.00	24.58
2	10	48.00	30.11

As was mentioned above, the two groups were taught the same grammar using two different teaching methods. The fact that Group 1 performed better in the pre-experiment evaluation stage needs to be considered when making comparisons between the performances of the two groups in the later stages of the experiment. In order to assess the effect of the teaching method used on the performances of the participants, a comparison was needed to be made between the performance of every group before and after teaching. This was supposed to help in evaluating the usefulness of each teaching method on the participants' knowledge after teaching.

5.2 Results of exams after the teaching process

Before presenting the results of the participants after the teaching period, this section presents the results of the performance of the control group of native speakers on the two acceptability judgment tasks. As explained earlier, these native speakers' judgments were considered and used for comparison so that they can help in assessing how similar L2 learners' responses are to those of native speakers. Having responses similar to responses of native speakers was used in evaluating the performance of the L2 learners who participated in this study in the acceptability judgment tasks.

5.2.1 Results of native speakers judgments on the two acceptability judgment tasks

The 20 participants in this group were asked to say whether they thought that these structures seemed acceptable to them or not. As before, each task was presented in two different orders. As mentioned above, the purpose of including the native speakers' judgements was to use these judgements as 'correct' judgments according to which the responses of the participants are compared.

5.2.2 Results of the participants in groups 1 and 2 in the exam done after the teaching process

As explained in section 4.4.2.1, the participants in the two groups were taught the same topics according to two different teaching methods. After this period of teaching, Exam

2 (which can be seen in Appendix 6) was carried out. The data analysis included two questions in this exam as they tested the participants' knowledge of adverb placement and Yes/No question formation which they had acquired following the teaching process.

The second question in this exam Q2 (i.e. Add frequency adverbs to the following sentences), aimed to evaluate the usefulness of the teaching that the subjects received about adverb placement (which was based on positive evidence only) in improving their performance on this topic. This evaluation is based on a comparison between their performance after the teaching stage and their performance in the previous stage. In an attempt to test for statistically-significant differences between students of the two groups on the second question (Q2) in this post-teaching exam, an independent-sample t-test using the SPSS software was carried out. The results show that group variances are non-equal. Levene's test for equality of variances shows that the variances of the two student groups are non-equal ($F = 1.839$; $p = .192$). Moreover, the results show that no statistically-significant difference exists between students of the two groups in their mean scores on this second question in the post-teaching exam ($t(18) = 1.290$, $p = .214$). This finding is supported by information presented in Table 4 where only slight differences are observed in the means and standard deviations of the first ($M = 83.20\%$, $SD = 23.00$) and second ($M = 68.54\%$, $SD = 27.63$) student groups. Nonetheless, the difference in mean scores between the groups is statistically non-significant, i.e., the two teaching methods are almost equally efficient in this topic.

Table 4: Group statistics for students' scores in adverb placement in the post-teaching exam.

Group	N	Mean	Standard Deviation
1	10	83.20	22.98
2	10	68.54	27.63

''Q3. B) Change into Yes/No questions'' is the second question that is involved in the data analysis process as it was designed to test knowledge about Yes/No question formation which is one of the areas related to the principles of verb raising parameter in English. In order to test for potential statistically-significant differences between students in their mean scores on this question in post-teaching exam, the researcher performed an independent-samples t-test using SPSS software. Levene's test for equality of group variances shows that the variances of the two student groups are unequal ($F = .000$; $p = 1.000$). Further, there exists no statistically-significant difference between students of the two groups in their mean scores on this question in the post-teaching exam ($t(18) = .870$, $p = .396$). The descriptive statistics presented in Table 5 illustrate that the first and second student groups have comparable means (84.00% and 74.00%, respectively).

Table 5: Group statistics for students' scores in Yes/No questions in the post-teaching exam

Group	N	Mean	Standard Deviation
1	10	84.00	26.33
2	10	74.00	25.03

A paired samples t-test was used to make a comparison between the performance of each group before and after teaching. This aims to assess how each teaching method helped in improving the performance of the participants after teaching. In this case, the comparison between the two teaching methods was based on assessing which method was better than the other in raising the performance of the participants in adverb placement and Yes/No question formation.

The first two paired t-tests were carried out to compare the performance of the participants in Group 1 before and after teaching. The tests show that the performance of Group 1 was better after the explicit teaching which the participants in this group had received on Yes/No question formation and adverb placement. As can be seen from

the results, the total average score of group 1 in Yes/No questions was 52% before teaching and it rose to 84% as a result of teaching. A paired samples t-test was carried out to test for statistically-significant differences, if any, in these mean scores of Group 1 students on the ''Yes/No'' questions between the pre-, and post-teaching exams.

The test results demonstrate that there is no statistically-significant difference between the sample students of group 1 in their mean scores on the 'Yes/No' questions in the pre-, and post-teaching exams ($t(9) = -1.863$, $p = .095$). Despite the fact that Table 6 reveals pronounced differences in the means and standard deviations of group 1 students' scores before ($M = 52.00\%$, $SD = 41.31$) and after ($M = 84.00\%$, $SD = 26.33$) teaching, the t-test shows that these differences are statistically non-significant, perhaps owing to the small sample and group sizes. To conclude, this test result indicates that the Libyan university students taught grammar topics according to the principles of the explicit grammar translation method used with the participants in Group 1 had higher mean scores on the ''Yes/No'' questions after teaching than before teaching, but the difference is non-significant statistically. This finding suggests that this teaching method has a chance for success once re-examined on a larger sample.

Table 6: Group statistics for scores of Group 1 students on Yes/No questions in the pre-, and post-teaching exams (Paired Sample Statistics)

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	52.00	41.31
Total Score Post- teaching	10	84.00	26.33

This study was also interested in determining whether or not there are statistically-significant differences in the mean scores of Group 1 students on adverb placement between the pre-, and post-teaching exams. Therefore, another paired-samples t-test was carried out using the SPSS software. The testing results show that there is no statistically-significant difference in the mean scores of Group 1 students on

the Adverb placement between the pre-, and post-teaching exams ($t(9) = -.819$, $p = .434$). Table 7 supports this finding as it clarifies that the mean scores of group 1 students on the Adverbs placement before and after teaching are close to one the other (76.00% and 83.00%, respectively). Consequently, this test result suggests that the grammar translation method will probably prove much successful if applied to a large sample.

Table 7: Group statistics for scores of Group 1 students on Adverb Placement in the pre-, and post-teaching exams (Paired Samples Statistics)

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	76.00	24.58
Total Score Post- teaching	10	83.00	22.98

On the other hand, the paired samples *t*-tests that were done to make a comparison between the performance of Group 2 before and after implicit teaching showed that the performance was improved as a result of this teaching. The results show that the implicit teaching with positive evidence was useful; the average score of this group was 28% before teaching and it rose to 74% after teaching. A paired samples t-test was conducted to identify whether these means scores reflect any statistically-significant differences in the performance of Group 2 students in ''Yes/No'' questions between the pre-, and post-teaching exams.

The outcomes of the paired-sample *t*-test show that a statistically-significant difference exists between the mean scores of Group 2 students on the ''Yes/No'' questions between the pre-, and post-teaching exams ($t(9) = -3.977$, $p = .003$). This result agrees well with the findings reported in Table 8 where it is noticed that group 2 students have higher mean score after (74%) rather than before (28%) receiving the teaching intervention. This result implies that the implicit teaching with positive evidence only used with Group 2 students was effective.

Table 8: Group statistics for scores of Group 2 students on Yes/No questions in the pre-, and post-teaching exams (Paired Sample Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	28.00	26.99
Total Score Post- teaching	10	74.00	25.03

Another paired-sample *t*-test was conducted to determine whether or not there are statistically-significant differences in the mean scores of Group 2 students in adverb placement between the pre-, and post-teaching exams. The test results indicate that no statistically-significant difference exists between the sample students of Group 2 in their mean scores in adverb placement in the pre-, and post-teaching exams ($t(9) = -1.281$, $p = .232$). The group means for scores of Group 2 students (Table 9) reveal noticeable difference in Group 2 students' mean scores in the pre-teaching (48.00%) and post-teaching (68.54%) exams. However, this difference failed to prove statistically significant.

Table 9: Group statistics for scores of Group 2 students on Adverb Placement in the pre-, and post-teaching exams (Paired Sample Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	48.00	30.11
Total Score Post- teaching	10	68.54	27.63

To test for statistically-significant differences between the mean scores of students on the first Grammaticality Judgement task (which was introduced to the participants at this stage to assess their linguistic competence after the teaching stage), an independent-samples *t*-test was performed using SPSS. As can be noticed, Levene's test for equality of variances indicates that the variances of the two student groups are not equal ($F = .565$; $p = .462$).

Additionally, the results demonstrate that there is no statistically-significant difference between the mean scores of students of the two groups on acceptability

judgment task 1 in the post-teaching exam ($t(18) = -.893$, $p = .384$). Table 10 supports this result and shows that the means scores of the first ($M = 69.37\%$) and second ($M = 74.02\%$) groups of students are comparable.

Table 10: Group statistics for scores of the two groups of students on acceptability judgment task 1 in the post-teaching exam

Group	N	Mean	Standard Deviation
1	10	69.37	12.00
2	10	74.02	11.26

5.3 Results of the post reading exams

As explained above, after finishing the teaching period and evaluating the effect of this teaching on the performance of the participants in Exam 2 and acceptability judgment task 1, the reading period started. During this period, the participants in the two groups were presented with a number of reading tasks in which there were some ungrammatical Yes/No questions and some sentences in which adverbs were placed between a verb and an object NP (which is not grammatical in English).

Another exam and another acceptability judgment task were carried out after this reading period to test whether it had affected the knowledge that the participants got earlier. This effect would have happened, if the participants had started to prime structure as a result of the repeated exposure in the reading texts which is known in literature as syntactic priming. The performance on the acceptability judgment task 2 which was carried out at this stage was compared to the performance of acceptability judgement task 1 to test for evidence of any syntactic satiation effect in the performance of the participants at this stage.

The answers of the participants to question 2 ''Q2. B) Change these sentences into Yes/No questions'' were used to test the participants' performance on Yes/No

questions formation after reading. The mean scores show that the performance of Group 1 was higher than that of Group 2. So as to test for statistically-significant differences between the two groups of students in their mean scores in this question, an independent-samples t-test was carried out. Levene's test for equality of group variances indicates that the variances indicates that the variances of the two student groups are equal ($F = 7.143$; $p = .017$). Further, the results show that no statistically-significant difference exists between students of the two groups in their mean scores in question 2B in the post-reading exam ($t(16) = 1.061$, $p = .305$). The descriptive statistics given in Table 11 supports this finding and shows that the first and second student groups have somehow close means (94.44% and 77.78%, respectively).

Table 11: Group statistics for students' scores on Adverb Placement in the post-reading exam

Group	N	Mean	Standard Deviation
1	10	94.44	16.66
2	10	77.77	44.09

In an attempt to test for statistically-significant differences, between the two groups of students in their mean scores on Question 3 in the post-reading exam (that tested performance in adverb placement after reading), an independent-samples t-test was carried out. Results of Levene's test indicated that the variances of the two student groups are equal ($F = 15.267$; $p = .001$). Moreover, there is no statistically-significant difference between students of the two groups in their mean scores on adverb-placement in the post-reading exam ($t(18) = 1.136$, $p = .271$). In spite of the fact that the mean score of Group 1 in this question in the post-reading exam is more than twice than that of Group 2 (30.00 % vs. 14.00%; Table 24), this difference did not prove to be statistically significant, most likely because of the low sample size.

Table 12: Group statistics for students' scores on Yes/No questions in the post-reading exam

Group	N	Mean	Standard Deviation
1	10	30.00	42.42
2	10	14.00	13.49

In order to find out whether the knowledge that the participants had gained following teaching was affected by the ungrammatical primes during the reading stage, a series of paired sample t-tests were conducted to make a comparison between the performance of each group before and after reading.

The results show that the mean score of Group 1 increased from 84% before the reading phase to 95% after reading. The paired sample t-test illustrates that no statistically-significant difference exists between the sample students of Group 1 in their mean scores on the ''Yes/No'' questions in the pre-, and post-reading exams ($t(9)$ $= -1.039$, $p = .326$). This test outcome accords with Table 26 which points out that the mean scores of group 1 students' before ($M = 84.00\%$, $SD = 26.33$) and after ($M = 95.00\%$, $SD = 15.81$) reading do not differ much.

Table 13: Group statistics for scores of Group 1 students on Yes/No questions in the pre-, and post-reading exams (Paired Samples Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	84.00	26.33
Total Score Post- teaching	10	95.00	15.81

On the contrary, after making a comparison between the performance of Group 1 in adverb placement before and after reading, it appears that there was an effect of the ungrammatical adverb placements during the reading phase on the performance of the participants in Group 1 after reading. The average score of Group 1 decreased from 83.2% before reading to 30% after. The paired sample t-test outcomes show that there is a statistically-significant difference in the mean scores of students of Group 1 on adverb placement between the pre-, and post-reading exams ($t(9) = 4.285$, $p = .002$). As

mentioned before, this finding is strongly supported by Table 14 which uncovers that the mean scores of Group 1 students on adverb placement before and after reading are widely different (83.20% and 30.00%, respectively). So, Group 1 students have significantly higher scores on adverb placement before than after reading. This result suggests that there was a syntactic priming of the ungrammatical adverb placements put in the reading texts.

Table 14: Group statistics for scores of Group 1 students on Adverb Placement in the pre-, and post-reading exams (Paired Samples Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	83.20	22.98
Total Score Post- teaching	10	30.00	42.42

On the other hand, the results of the comparison between the performance of Group 2 before and after reading were similar to the results noticed with Group 1. There was no difference between the results of Group 2 in Yes/No question formation before and after reading. The paired sample t-test results show that no statistically-significant difference exists between the sample students of Group 2 in their mean scores on Yes/No questions formation in the pre-, and post-reading exams ($t(9) = .148$, $p = .885$). This agrees with the descriptive statistics for the two groups (Table 15) where it is seen that the mean scores before and after reading are nearly the same (74.00% and 72.15%, respectively). This suggests that there was no syntactic priming effect of the ungrammatical Yes/No questions put in the reading texts neither by the explicitly taught Group 1 nor by the implicitly taught Group 2.

Table 15: Group statistics for scores of Group 2 students on Yes/No questions in the pre-, and post-reading exams (Paired Sample Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	74.00	25.03
Total Score Post- teaching	10	72.15	45.22

Moreover, as was noticed with Group 1, the performance of Group 2 in adverb placement seems to be affected by the ungrammatical primes in reading texts. The paired samples t-test, which assessed whether there is a statistically significant difference between the performance of Group 2 students in adverb placement before and after reading, shows that a statistically-significant difference exists in the mean scores of Group 2 students in Adverbs placement between the pre-, and post-reading exams ($t(9) = 5.685$, $p = .000$). Table 16 reinforces this finding as it uncovers that the mean scores of Group 2 students in adverb placement before and after reading vary widely (68.54 %and 14.00%, respectively). In other words, Group 2 students have higher scores in adverb placement before, rather than after, reading.

Table 16: Group statistics for scores of Group 2 students on Adverb Placement in the pre-, and post-reading exams (Paired Sample Statistics).

Pair 1	N	Mean	Standard Deviation
Total Score Pre- teaching	10	68.54	27.63
Total Score Post- teaching	10	14.00	13.49

5.3.1 Acceptability Judgement task 2

This task was designed to test the participants' intuitions after the repeated exposure to ungrammatical structures and to compare their reactions to ungrammatical structures before and after any possible syntactic priming effect. In this acceptability judgement task, it seems that the performance of group 1 was almost similar or to some extent better than the performance of group 2. The average score of Group 1 was 73.54% while the total average score of Group 2 was 65.45%. To test for statistically-significant differences between the two groups of students in their mean scores in acceptability judgment task 2 in the post-reading exam, an independent-samples *t*-test was conducted. Levene's test for equality of variances indicates that the variances of the two student groups are not equal ($F = .047$; $p = .830$). The results show that there is no statistically-significant difference between the two groups of students in their mean

scores acceptability judgment task 2 in the post-reading exam ($t(18) = 1.929$, $p = .070$). Table 17 supports this test outcome and shows that the mean scores of the first ($M = 73.42\%$) and second ($M = 65.45\%$) groups of students are comparable.

Table 17: Group statistics for scores of the two groups of students on acceptability judgment task 2 in the post-reading exam

Group	N	Mean	Standard Deviation
1	10	73.42	9.82
2	10	65.45	8.61

A paired samples t-test was carried out to compare between the performance of Group 1 in acceptability task 1 and the performance of the same group in acceptability judgement task 2. This was done to investigate whether the performance of the participants in Group 1 was changed (syntactic satiation) as a result of syntactic priming of the ungrammatical structures during the reading phase of the experiment. The results show that there is no such effect because of the performance of Group 1 has increased, not decreased after reading as expected. The paired samples t-test shows that no statistically-significant difference exists in the mean scores of Group 1 students between GJ task 1 and GJ task 2 ($t(9) = -1.249$, $p = .243$). Table 18 reinforces this finding as it uncovers that the mean scores of group 1 students on both tasks are very close to one the other (69.37% and 73.42%, respectively).

Table 18: Group statistics for scores of group 1 students on acceptability judgment task 1 and acceptability judgment task 2 (Paired Sample Statistics)

Pair 1	N	Mean	Standard Deviation
Acceptability Judgment Task 1	10	69.37	12.00
Acceptability Judgment Task 2	10	73.42	9.82

On the contrary, another paired samples t-test showed that the performance of Group 2 was lower in acceptability judgement task 2 after reading. The performance of this group in acceptability judgement task1 before reading was higher in that their

average score was 74.02% which decreased to 65.45% in acceptability judgement task 2 after reading. The t-test shows that there exists a statistically-significant difference in the mean scores of Group 2 students between acceptability judgement task 1 and acceptability judgement task 2 ($t(9) = 2.868$, $p = .019$). Evidence in support of this finding can be found in Table 19 where it is seen that the mean score of Group 2 students in acceptability judgement task 1 (74.02) is higher than their mean score on acceptability judgement task 2 (65.45). ($t(18)=2.59$, $p=.009$). This result shows that the syntactic priming of ungrammatical structures during the reading stage has led to syntactic satiation effect with the implicitly taught group of students. The effect of the ungrammatical adverb placement has led the participants in this group to accept structures they had rejected before in GJ task1.

Table 19: Group statistics for scores of group 2 students on acceptability judgment task 1 and acceptability judgment task 2 (Paired Sample Statistics).

Pair 1	N	Mean	Standard Deviation
Acceptability Judgment Task 1	10	74.02	11.26
Acceptability Judgment Task 2	10	65.45	8.61

5.4 Results of the final confirmation exams

The students' knowledge was tested by extra exams after the main experiments (see exams 4 and 5 in Appendix 7). The purpose of using these two exams was to confirm the results from exam 3 which was carried out at the end of the final stage of the experiment. They included questions that tested knowledge about Yes/No questions and adverb placement in an indirect way.

Exam 4

The first question in this exam ''Q2. B) Rewrite these sentences correctly''. Only the items that depend on knowledge of Yes/No question formation and/or adverb placement are included in this presentation. An independent groups t-test was

conducted to test whether there is a statistically significant difference in the performance of the students in the two groups in this question. Levene's test for equality of variances showed that the variances of the two student groups are unequal ($F = 2.310$; $p = .146$). Moreover, there is no statistically-significant difference between students of the two groups in their mean scores on the third question in the post-reading exam ($t(18) = .264$, $p = .795$). The descriptive statistics shown in Table 20 supports this result as they show that the mean scores on the third question of the post-reading confirmation exam are nearly the same for both groups (75.00% and 70.00%, respectively).

Table 20: Group statistics for students' scores on Q2B of the post-reading confirmation exam.

Group	N	Mean	Standard Deviation
1	10	75.00	35.35
2	10	70.00	48.30

The performance of the two groups in Yes/No question formation was very high in exam 3 after the reading phase. The performance of the two groups in question 3 ''Q3. B) Change these sentences into yes\no questions'' that tested the participants' performance in Yes/No question formation in Exam 4, confirmed this good performance. However, the high mean scores this time were lower than in Exam 3. In an effort to test for statistically-significant differences, if any, between students of both groups in their mean scores in Yes/No question formation in this post-reading confirmation exam, the researcher carried out an independent-sample t-test. Levene's test for equality of group variances shows that the variances of the two student groups are not equal ($F = 3.682$; $p = .071$). The t-test shows that there is no statistically-significant difference between students of the two groups in their mean scores on Yes/No question formation in the post-reading confirmation exam ($t(18) = .907$, $p = .378$). This finding is supported by the descriptive statistics introduced in Table 21

where it is seen that students of Group 1 have slightly higher mean score ($M = 77.50\%$) than students of Groups 2 ($M = 62.50\%$).

Table 21: Group statistics for students' scores on (Yes/No questions) of the post-reading confirmation exam.

Group	N	Mean	Standard Deviation
1	10	77.50	29.93
2	10	62.50	42.89

Exam 5

The purpose of doing this exam was the same as of Exam 4, i.e. to confirm the results of the post-reading Exam 3. As in the previous exams, only the items that test knowledge about either adverb placement or Yes/No question formation were considered in this analysis. The first question in this exam is ''Q1. B) Rewrite the following sentences correctly'' which tested knowledge on adverb placement and Yes/No question formation. In an attempt to test for probable statistically-significant differences between students of the two groups investigated in their mean scores on question 1B in this post-reading exam, an independent-sample t-test was conducted. Levene's test for equality of variances shows that the variances of the two student groups are non-equal ($F = .256$; $p = .619$). Additionally, the results show that no statistically-significant difference exists between students of the two groups in their mean scores on question 1B in this exam ($t(18) = 1.174$, $p = .256$). Though the descriptive statistics (Table 22) shows that students of Group 1 have higher mean score (72.50%) than students of Group 2 (52.50%), it seems that due to the small sample size this difference was not high enough to be statistically significant.

Table 22: Group statistics for students' scores on Q1B of the post-reading confirmation exam.

Group	N	Mean	Standard Deviation
1	10	72.50	38.09
2	10	52.50	38.09

However, the results of another question in this exam which asks the participants to change some sentences into Yes/No questions ''Q2. A) Change into Yes/No questions'' showed that the performance of Group 2 (70%) was somewhat higher than the performance of Group 1 (68.56%).The researcher tested for statistically-significant differences between students of the two studied groups in their mean scores on this question using the independent-sample t-test. The results show that group variances are non-equal. Levene's test for equality of variances shows that the variances of the two student groups are non-equal ($F = .177$; $p = .679$). Moreover, the difference between students of the two groups in their mean scores in this question are non-significant ($t(18) = -.069$, $p = .946$). The descriptive statistics (Table 23) strongly supports this result as the mean scores of students of both groups are almost identical (68.56% and 70.00%, respectively), which means that the two teaching methods investigated here (the grammar translation method and the direct method) almost have the same effects on the participants' learning and achievement in Yes/No question formation.

Table 23: Group statistics for students' scores on Yes/No questions in the post-reading confirmation exam.

Group	N	Mean	Standard Deviation
1	10	68.56	45.08
2	10	70.00	48.30

On the other hand, Group 1 was better in the third question ''Q3. B) Rewrite the following sentences correctly'' which tested the participants' knowledge on adverb placement. Group1 mean score was 73.33% compared to group 2 who scored 59.98%. The independent groups t-test indicates that group variances are non-equal. Levene's test for equality of variances shows that variances of the two groups are not equal ($F = .021$; $p = .886$). Further, the difference between students of the two groups in their mean scores on adverb placement in this post-reading exam is statistically non-

significant ($t(18) = .680$, $p = .505$). Table 24, which shows descriptive statistics for scores on this exam of both groups, reveals that even though the difference between the two groups is statistically non-significant, Group 1 students have higher mean score on this question that retested post-reading performance in adverb placement (73.33%) than students of Group 2 (59.98%).

Table 24: Group statistics for students' scores on Adverb Placement in the post-reading confirmation exam.

Group	N	Mean	Standard Deviation
1	10	73.33	43.88
2	10	59.98	43.88

Data Analysis

The previous chapter presented the scores of the participants for every 'correct' acceptance of forms in which main verbs do not raise. Scores were also given for every 'correct' rejection of structures in which adverbs placed or verbs raised 'incorrectly'. These scores are analysed and discussed in this chapter according to the different stages of the experiment. The results of this data analysis show that the two different teaching methods, the explicit and the implicit, were helpful in (re)setting the verb-raising parameter from Arabic to English in Yes/No question formation, but not in adverb-placement.

The two teaching methods helped in increasing the participants' performance after teaching, but the implicit teaching method was more helpful in improving the participants' proficiency level after teaching. The participants in the two groups were affected by ungrammatical primes in which verbs raised over adverbs, but not affected by ungrammatical Yes/No questions. Syntactic priming of ungrammatical adverb placements resulted in syntactic satiation with the participants of Group 2 who were taught using the implicit teaching method. In this case, the explicit teaching method that was used with Group 1 was more effective as the participants in this group did not change their previous judgements (syntactic satiation) as a result of syntactic priming.

6.1 Presentation and discussion of the results of the pre-experiment evaluation exam

As mentioned above, this exam was designed to give insight into the overall knowledge of the participants before the experiment. This step was done to assess the extent to

which the teaching and the reading phases could affect this knowledge. The results showed that the performance of Group 1 in this exam was better than the performance of Group 2. The average score of Group 1 in the three questions that were included in the data analysis from this exam was 61.83%, while the score of Group 2 was just 37.83% (as shown in figure 6). These three questions were chosen for analysis as they are based on knowledge of the verb-raising parameter in English as indicated by correct Yes/No question formation and correct adverb placement.
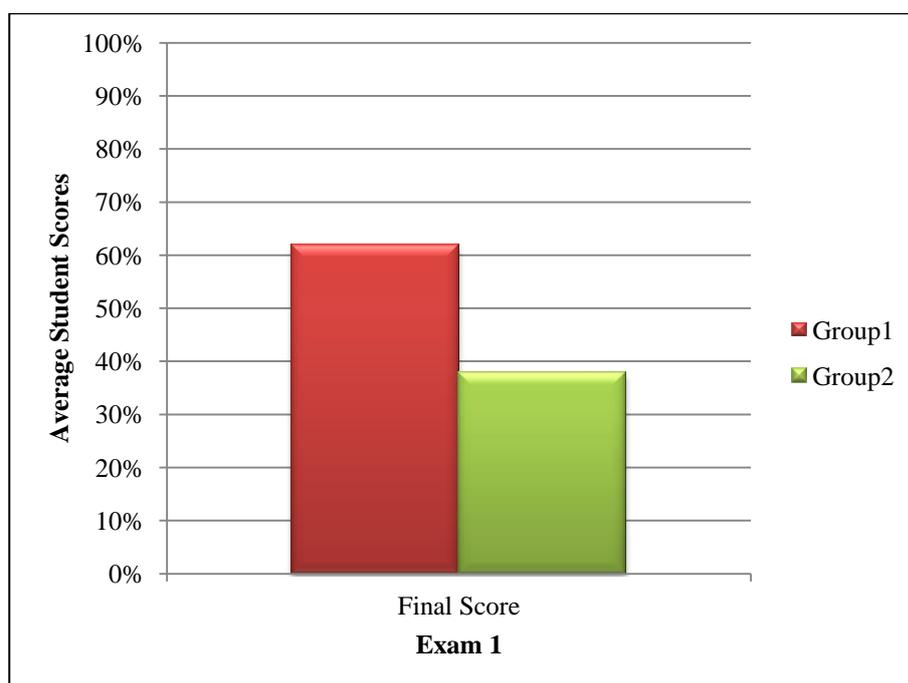
Figure 6: Comparison between Group 1 and Group 2 in exam 1 before the experiment

The fact that the performances of the participants in the two groups were not equal before the experiment started, may suggest that making a comparison between the results of the two groups after teaching could lead to misleading results. A higher score achieved by Group1 may not in fact provide evidence that the explicit teaching used with Group 1 was more useful than the implicit teaching used with Group 2, but simply reflect the fact that Group 1 was already more proficient before teaching.

For this reason, the evaluation process to make comparisons between the results of the two groups was changed. If the two groups had been identical, a comparison could have been made between their performances after teaching. The evaluation process was changed to be based on making comparisons between the results achieved before teaching and the results achieved after teaching by every group. Consequently, the comparisons made within each group using paired samples t-tests investigated which teaching method led to better performance when compared with the previous performance before teaching.

6.2 Discussion of the results of the post- teaching exam

As mentioned above, the participants of the two groups were taught the same topics according to two different teaching methods. After the teaching phase, exam 2 (see Appendix 6) was carried out to assess the participants' knowledge after teaching. The performance of the two groups was compared on two questions of this exam and the performance of GJ task 1. As can be noticed from figure 7, the total average score for Group1 (taught using the explicit method), was higher than the average score for Group 2 (taught using an implicit method).
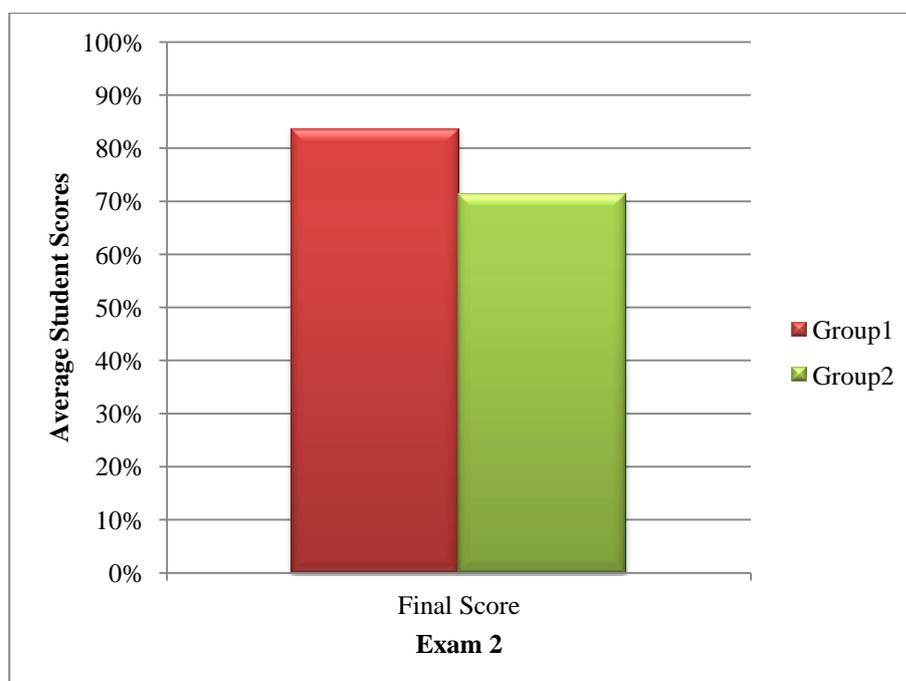
Figure 7: a comparison between Group 1 and Group 2 in exam 2 after the teaching stage.

The data analysis process included the results from two questions of this exam. One of these two questions (section 5.2.2) was chosen because it aimed to evaluate how useful was the teaching that the subjects received about adverb placement. The average score of Group 1 was 83.2% while the average score for Group 2 was 68.54% which means that Group 1 was better this time. As explained earlier, the fact that this group was already better before teaching, leads to the idea that this better performance of Group 1 after teaching cannot be taken as evidence that the explicit teaching that they received is more effective than the implicit teaching of Group 2.

As explained before, in order to assess which teaching method was better in improving knowledge about correct adverb placement, a comparison was made between the results achieved in the previous exam in adverb placement and how these results improved after teaching. In other words, this comparison was made between the results of every group before and after teaching. The results showed that the performance of the participants in Group 1 increased in adverb placement from 76% before teaching to 83.2% after they received explicit teaching with positive evidence.

However, as mentioned in the previous chapter (5.2.2), the paired samples t-test showed that this result does not reflect a real difference.

On the other hand, the score achieved by Group 2 in adverb placement was also higher after teaching. The score for Group 2 in adverb placement increased from 48% to 68.5% after implicit teaching. However, the paired samples t-tests that used to assess whether these different results reflect a real difference or not, showed that these different results were not necessarily because of a ''real'' difference between the results before and after teaching. This was noticed in the paired t-test that was used to make a comparison between the results achieved by Group 1 in adverb placement before and after explicit teaching (section 5.2.2)

The same result was also noticed in the other paired samples t-test used to make a comparison between the results achieved in adverb-placement by Group 2 before and after implicit teaching. The test showed that these scores do not necessarily reflect a real difference between the scores achieved before and after. There was no significant difference in the performance of the two groups in adverb placement after the teaching they received.

However, the other comparisons that were made to assess how the performances in Yes/No question formation have changed after teaching have come to different results. The average score achieved by Group1 in Yes/No question formation increased from 52% before teaching to 84% after explicit teaching. However, the paired samples t-test showed that the difference between the scores achieved by Group 1 before teaching and after teaching is non-significant. On the other hand, the implicit teaching with positive evidence only that the participants in Group 2 received was also useful in improving the performance of the participants in this group in Yes/No question formation. The performance of this group increased from 28% before teaching to 74%

after implicit teaching. The paired samples t-test showed that this result reflects a statistically significant difference.

The fact that Group1 always achieved higher scores than Group 2 in this exam may lead us to conclude that the Grammar Translation method used with Group 1 was better in teaching than the Direct method that was used with Group 2. However, this conclusion does not consider the fact that in the pre-teaching stage, the participants of Group 1 were better than the participants in Group 2, which means that the better performance might be due to previous knowledge, rather than the teaching method used. Evidence that may contribute to the fact that the implicit method had a better effect in improving knowledge of the participants is that it improved performance of Group 2 in adverb placement and Yes/No question formation after teaching more than the explicit method did with Group 1. This may lead to the idea that the use of the implicit teaching led to better results at this stage.

Figures 8 and 9 show the way that each teaching method improved the knowledge of the participants from their levels before teaching to their new levels after teaching. It needs to be mentioned here that the paired t-tests showed that the difference in the performances of the participants in the two groups in Yes/No question formation after teaching was real. Nevertheless, the improvement that was noticed in the performance in adverb placement by the participants in the two groups did not reflect a significant difference according to the results achieved in the paired samples t-tests that were used to compare the performance before and after teaching.
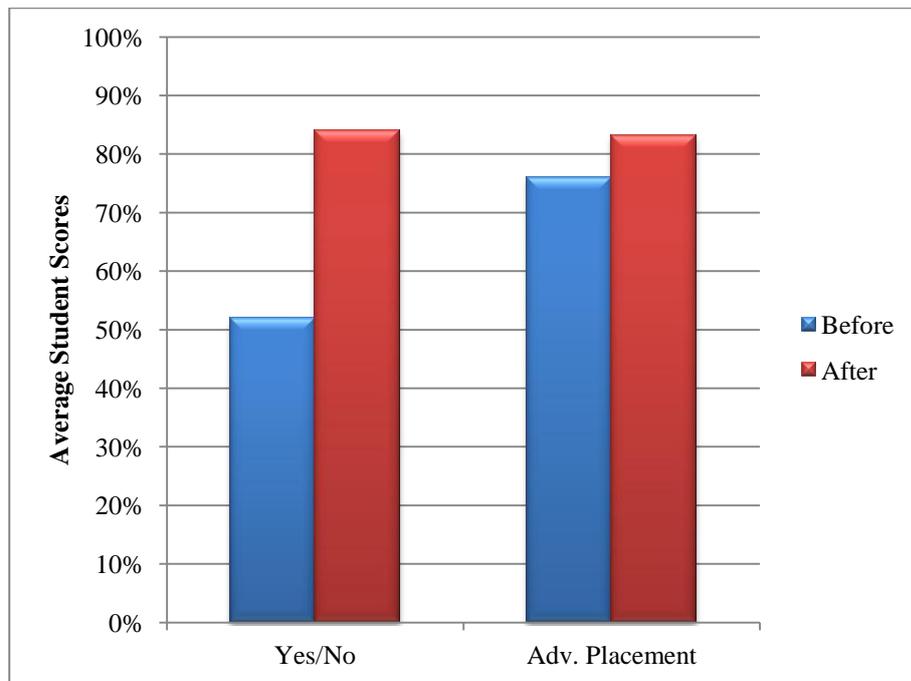
Figure 8: Performance of group 1 before and after teaching

These results shed light on the idea that although adverb placement and Yes/No questions formation are two characteristics of the same parameter, the participants were able to reset this parameter in one of them and not in the other. The verb-raising parameter was reset from its characteristics in Arabic, which allows verb raising to its English condition which does not allow this raising only in Yes/No question formation. The Arabic property of this parameter seemed to be still active in the way that the participants accepted and produced forms in which main verbs raise over adverbs.
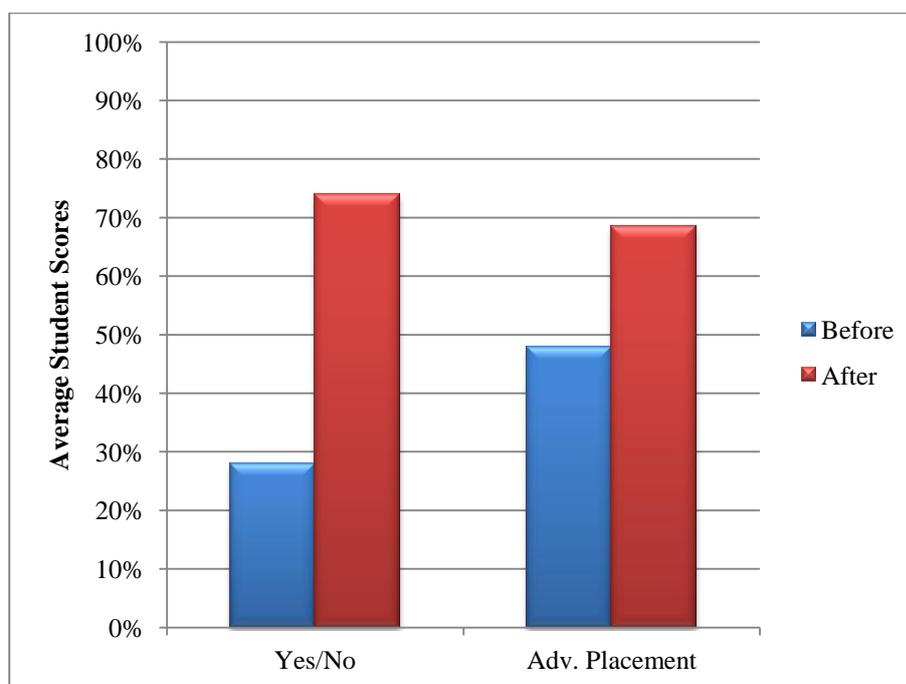
Figure 9: Performance of group 2 before and after teaching

The first acceptability judgement task was introduced to the participants after the normal exam. This was done as another means to confirm the results of the post teaching exam. Contrary to the results of the exam questions, the performance of Group 2 in GJ task 1 (with the average of 74.02%) was not much higher than the average of Group 1 (69.37%). However, the independent group t-test showed that this result does not reflect a significant difference which means that this cannot be taken as evidence that the participants in Group 2 performed better in this acceptability judgement task. The performance of this task will be compared later with the performance in acceptability judgement task 2 which was carried out after the reading stage to see if there was any syntactic satiation effect as a result of priming ungrammatical structures during the reading stage.

By making a comparison between the average scores achieved in the post-teaching exam and the post-teaching acceptability judgement task for each group, it appears that the two groups achieved similar scores in both of them. This similarity can be noticed in that Group 1 achieved the average score 83.6% in the exam and 69.37%

in the acceptability judgement task, while Group 2 achieved the average score 71.27% in the exam and 74.02% in the grammaticality judgement task. The similarity also appears in the fact that the participants in the two groups performed better in Yes/No questions than in adverb placement.

This result may refer to the reliability of acceptability judgement tasks as a source of data in second language acquisition research. This assumption is based on the fact that the participants in the two groups of second language learners who participated in this study achieved similar results in the acceptability judgement task and in the other formative exam which were carried out at the same time and in the same conditions.

6.3 Discussions of the results of the post-reading exam

The reading period, in which the participants were exposed to ungrammatical structures in a number of reading tasks (examples in Appendix 10), started after the teaching period and after the evaluation of the effects of this teaching on the performance of the participants in Exam 2 and acceptability judgement task 1. The ungrammatical structures which were included in the reading tasks were some ungrammatical Yes/No questions and some sentences in which adverbs were placed after main verbs (grammatical in Arabic but not grammatical in English). The reading texts included sentences like *Took the tourists nice photos in Leptis Magna?* and structures such as *People in Leptis Magna show always the tourists nice places to see*. As mentioned earlier, another exam and another acceptability judgement task were carried out after this reading period to look for evidence of syntactic priming as a result of reading these ungrammatical structures.

The results of Exam 3 (Appendix 7), carried out at this stage after reading, showed that the average score for Group 1 (62.5%) was higher than Group 2 (43.08%) as shown in figure 10. A comparison was made between the results achieved in every

question in this exam to evaluate the difference if any between the performance of the participants in the two groups in the way they rated or produced Yes/No questions or adverb placement. Consequently, the effect of the reading stage was investigated by making a comparison between the performance of every group before and after reading.
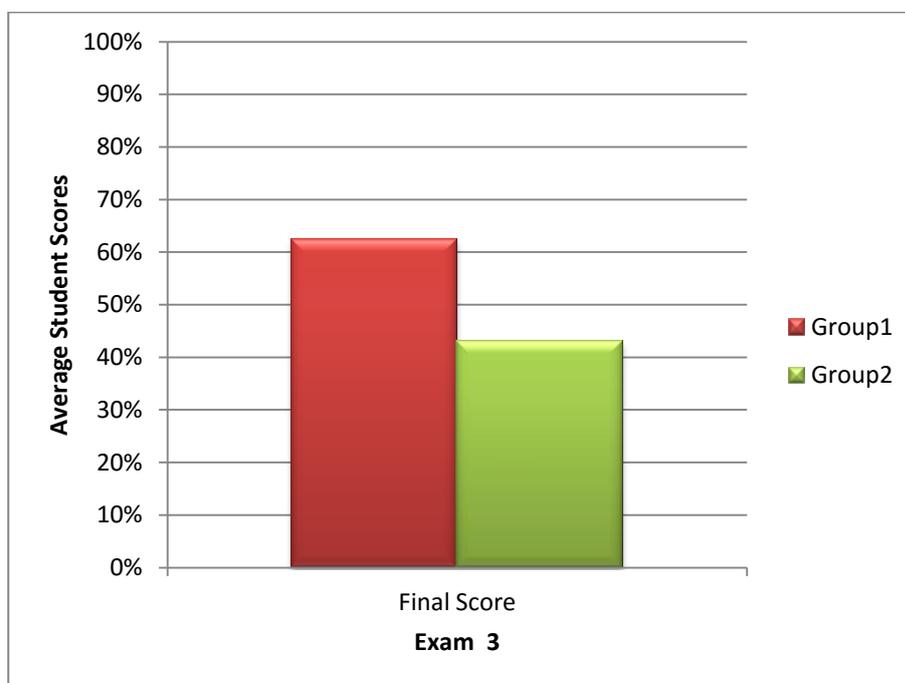
Figure 10: a comparison between group 1 and group 2 in exam 3 done after the reading stage

6.3.1 Performance of the two groups in Yes/No question formation during the experiment

It was noticed that the participants in the two groups achieved high marks in the question on Yes/No question formation in this post-reading exam. The performance of Group 1 with the average score of 95% was higher than the performance of Group 2 which achieved the average score of 72.15%, but the t-test showed that this does not reflect a significant difference which may suggest that the two groups achieved high scores in Yes/No questions without considering which one was higher than the other. These high marks achieved by the participants in the two groups suggest that the participants' knowledge of how to form Yes/No questions in English without raising the main verb to C was not affected by the repeated exposure to the ungrammatical

primes (see figures 3, 4 and 5 in section 2.3.2). This may lead to the conclusion that there was no syntactic priming effect for ungrammatical Yes/No questions in this experiment.

This result leads to the conclusion that the participants' knowledge in Yes/No questions formation achieved better rather than worse scores as can be noticed by making a comparison between the scores for every group before reading and after reading. The paired t-test that was used to make a comparison between the results for participants in Group 1 before reading and the scores for the same participants after reading showed that the average score before reading in Yes/No questions was 84% and it increased to 95% after reading. The t-test showed that this result does not reflect a significant difference which is consistent with the previous conclusion that the participants' acquired knowledge on Yes/No question formation in English was not affected by the ungrammatical primes encountered during the reading stage.

The performance of the participants in Group 1 in Yes/No question formation during the three stages of the experiment is illustrated in figure 11. It was mentioned before that one of the aims of this study was to test whether the performance in Exam 3 would be lower than Exam 2 as a result of the effect of ungrammatical primes during the reading stage. However, the results showed that this effect of syntactic priming did not affect the performance in Yes/No question formation even after repeated exposure to these primes. This is considered as evidence of the effect of explicit grammar teaching through positive evidence only which was used with Group 1 in building a stable knowledge in Yes/No question formation. Such stable knowledge was not affected by syntactic priming of ungrammatical structures during the reading phase.
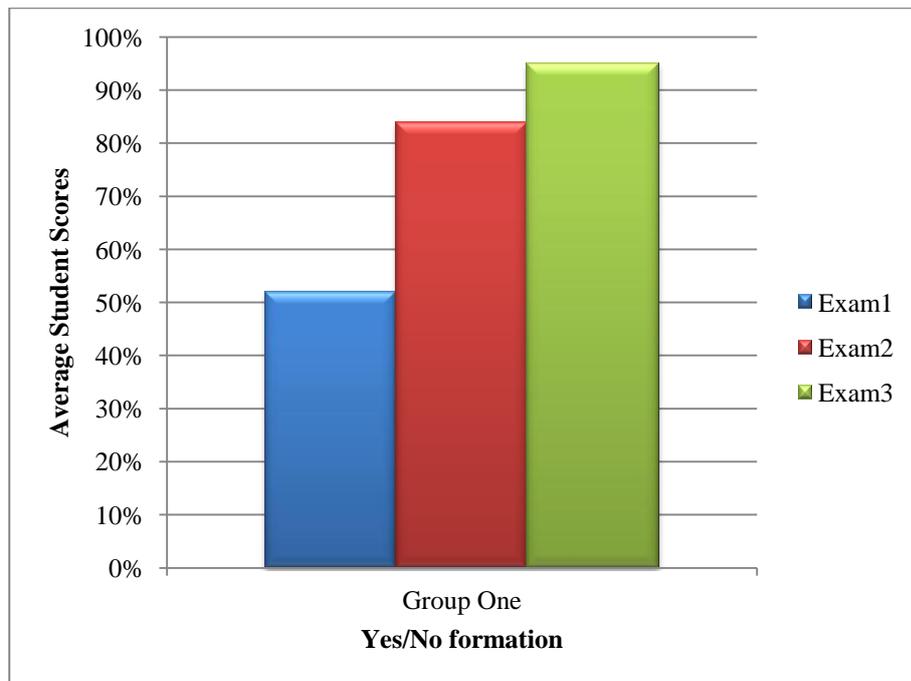
Figure 11: Yes/No question formation by Group 1 in the three exams

The results achieved from the paired-samples t-test that compared the performance of Group 2 in Yes/No questions before reading and after reading confirm the previous conclusion. These results were similar to the results noticed with Group 1 in that there was no difference in the performance after reading. The average score for Group 2 was 74% before reading and it decreased a little to 72.% after reading. The t-test showed that there is no significant difference between the two results. The performance of the participants in Group 2 in Yes/No question formation during the three stages of the experiment is illustrated in figure 12.
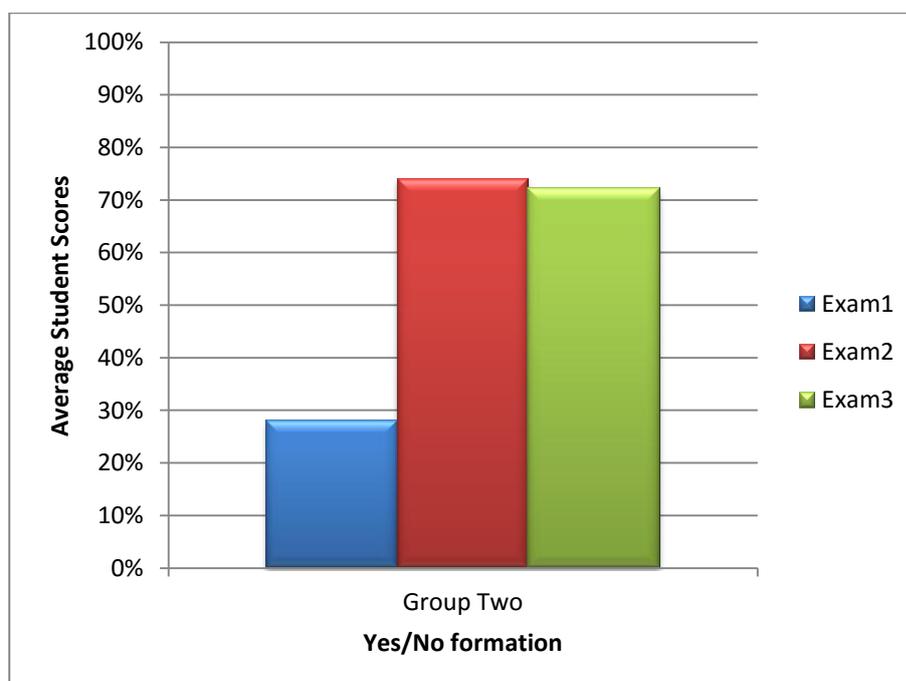
Figure 12: Yes/No question formation by Group 2 in the three exams

It can be concluded that positive evidence only teaching that the participants in the two groups received on Yes/No questions was useful in building a solid knowledge of how to form Yes/No questions in English. The two different teaching approaches that were used with the two groups gave similar results in that the knowledge that the participants in the two groups acquired was not significantly affected by ungrammatical primes. It can be concluded then that there was no syntactic priming effect for ungrammatical Yes/No questions for the participants in the two groups. This conclusion suggests that both teaching methods were effective. In other words, this results means that the explicit teaching and implicit teaching were useful in resetting the verb raising parameter from its L1 value to its L2 value.

6.3.2 Performance of the two groups in adverb placement during the experiment

The performance of the participants in the two groups was different in adverb placement after reading. This performance was lower concerning the fact that the average scores achieved by the two groups decreased after reading. The paired-samples t-test that was carried out to make a comparison between the performance of Group 1 in

adverb placement before reading and after reading showed that this performance decreased from 83.3% before reading to 30% after reading. The t-test showed that this result reflects a significant difference.

Similar results were noticed when making a comparison between the performances of Group 2 in adverb placement before and after reading. The average score achieved by Group 2 in adverb placement decreased from 68.54% before reading to 14% after reading. The paired-samples t-test showed that this result reflects a significant difference. These lower scores achieved in adverb placement by the participants in the two groups may lead to the supposition that there was a syntactic priming effect of the ungrammatical adverb placements in the reading tasks. This syntactic priming might have caused the drop in the performance of the two groups in this area.

It can be concluded that the performance of the two groups on adverb placement gives support to the idea of a syntactic priming effect can explain the drop of the performance after reading, as can be seen in figures 13 and 14. Figure 13 shows that the Grammar Translation method used with group 1was effective in improving the performance of the participants in adverb placement from Exam 1 to a higher level in Exam 2. However, this performance was built on relatively unstable knowledge because it was highly affected by the ungrammatical primes in the reading phase which can be inferred from the drop in their performance in Exam 3 shown in Figure 13.
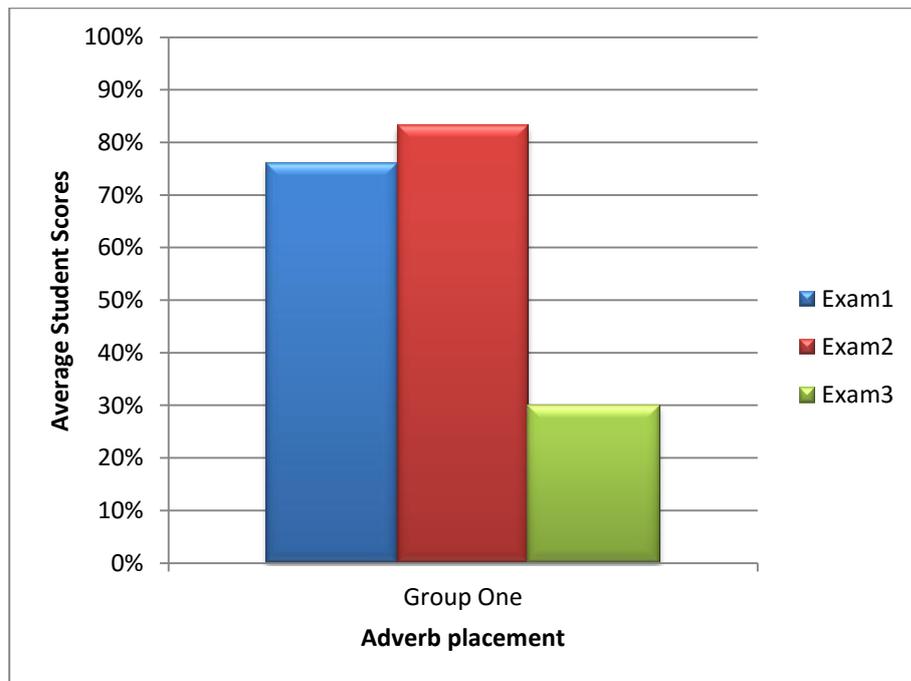
Figure 13: adverb-placement by Group 1 in the three exams

A similar result for participants in Group 2 can be seen in figure 14; the Direct teaching method was useful in improving their performance from Exam 1 to Exam 2. However, this improvement was not stable and it was affected by priming of ungrammatical structures in which adverbs were placed in inappropriate positions. As can be seen in figure 14, the participants in this group achieved a lower average score in adverb placement in Exam 3, which provides evidence of the syntactic priming effect of the ungrammatical structures.
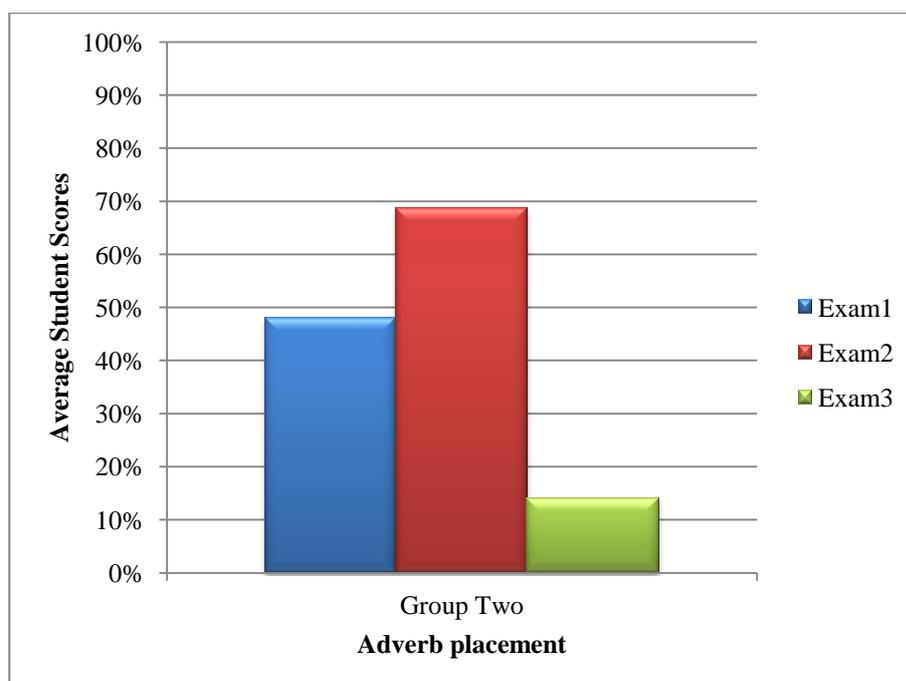
Figure 14: adverb-placement by Group 2 in the three exams

6.4 A Comparison between performance on acceptability judgment task 1 and acceptability judgment task 2

The performance of the participants in acceptability judgement task 2 which was carried out after the post-reading Exam 3 was compared to the judgments given by every subject for similar structures in acceptability judgement task 1, which was conducted before reading. This was done to test the subjects' intuitions after the repeated exposure to ungrammatical structures and to compare their reactions to ungrammatical structures before and after any syntactic priming effect. However, the performance of the two groups in acceptability judgement 2 was not very different from their performance in acceptability judgement 1 (see Figure 15 and Figure 16).

A comparison between the performance of Group 1 and Group 2 in acceptability judgement task 2 shows that the average score of the participants in Group 1 in this task was 73.42 % while the average score of Group 2 was 65.45%. An independent groups t-test showed that this reflects a significant difference between the performances of the

two groups. This difference was illustrated by an odds ratio analysis which described the performance of Group 1 as being 1.4 times higher than the performance of Group 2. However, as was pointed out earlier, the fact that the two groups were not equal before the experiment means that it is more useful to compare the performance of each group before and after each stage of the experiment rather than comparing the two groups.

For this reason, a paired samples t-test was used to make a comparison between the performance of Group 1 in acceptability judgement task 1 before reading and acceptability judgement task 2 after reading. The t-test showed that the average score for Group 1 in acceptability judgement task 1 was 69.37% and it increased to 73.42% in acceptability judgement task 2 after reading. However, the t-test showed that this result does not reflect a significant difference in the performance of Group 1 in the two grammaticality judgement tasks. It can be concluded then that the performance of Group 1 (Figure 15) does not provide evidence of syntactic satiation as the performance in acceptability judgement task 2 after reading was not very different from acceptability judgement task 1 which was carried out before reading.

The fact that the performance of Group 1 in acceptability judgement tasks was not changed after reading suggests that the participants did not accept structures that they had rejected earlier in acceptability judgement task 1. As explained before, there was a drop in the performance in adverb-placement which supports syntactic priming and the syntactic satiation hypothesis, but an increase in performance in Yes/No question formation, which provides evidence that syntactic satiation and priming did not happen here. This may explain the result from acceptability judgement task 2, that the performance of the participants in Group 1 was better in Yes/No questions formation and worse in adverb placement after reading so that the performance was almost the same in acceptability judgement task 2.
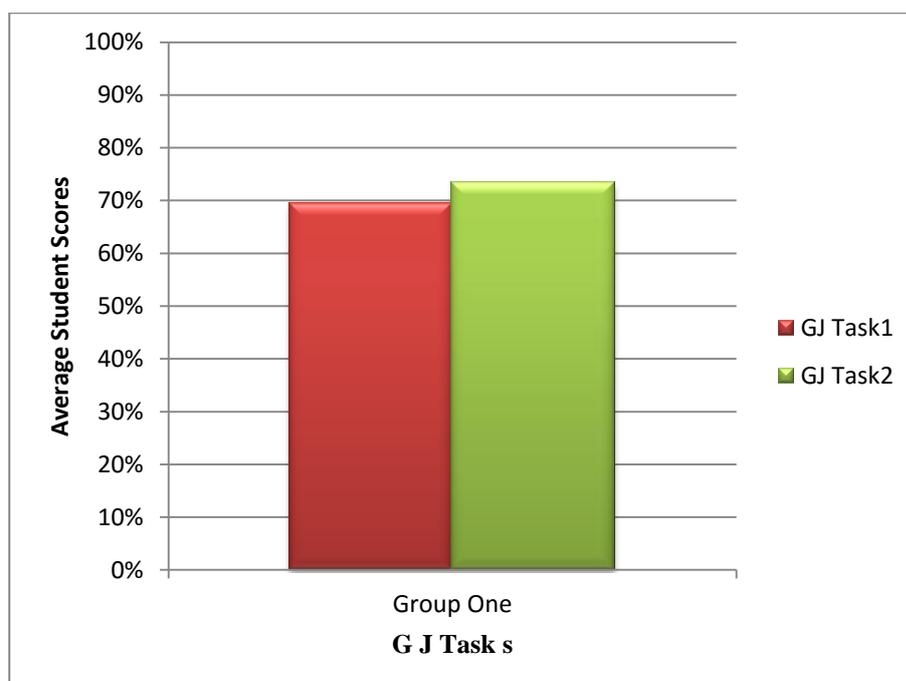
Figure 15: results of Group 1 in the two acceptability judgement tasks.

On the other hand, another independent groups t-test was carried out to compare

the performance of Group 2 in acceptability judgement task 1 before reading and

acceptability judgement task 2 after reading (figure 16). The results showed that the

performance of Group 2 decreased from 74.02% in acceptability judgement task 1

before reading to 65.45% in acceptability judgement task 2 after reading. The result of

an independent group's t-test showed that this reflects a significant difference which

was described by an odds ratios analysis which showed that the performance of Group

2 in acceptability judgement task 1 before reading was 1.5 times higher than

acceptability judgement task 2 after reading.

This result provides some evidence for a syntactic priming effect during the

reading stage. As mentioned, such an effect was noticed in adverb placement but not

with Yes/No questions formation which was also the case with the participants in

Group 1. The difference is that syntactic priming of ungrammatical adverb placements

led to evidence of a syntactic satiation effect with the participants in group 2 but not

with the participants in group 1. This suggests that explicit teaching was more effective with regard to this.
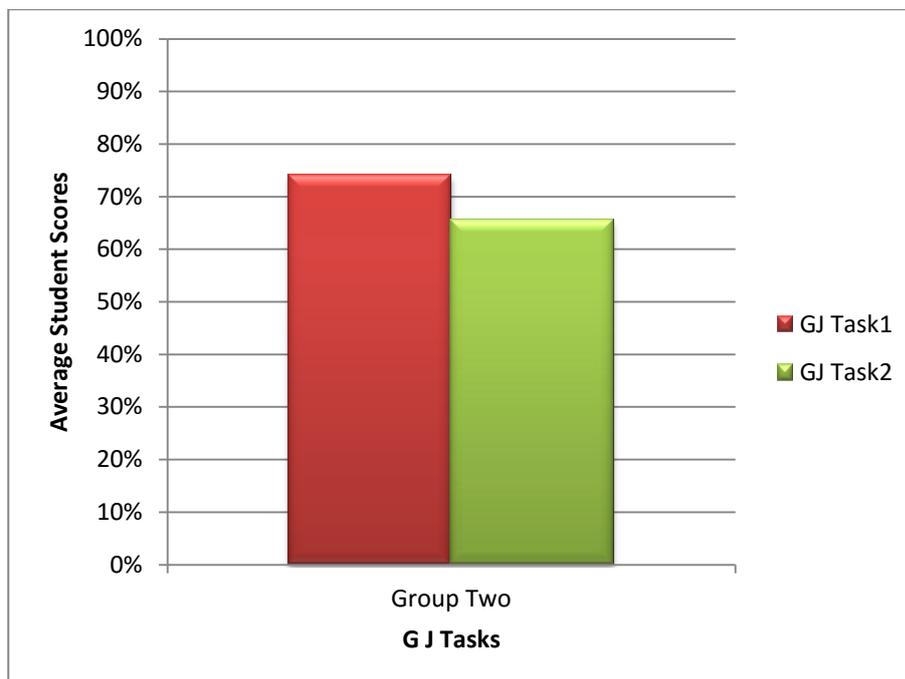
Figure 16: results of Group 2 in the two GJ tasks.

6.5 Results of final confirmation exams

The two exams 4 and 5 (Appendix 7) were carried out to confirm the results of Exam 3 which was carried out after the reading phase. They included questions that tested knowledge about Yes/No questions and adverb placement. In the two exams, Group 1 was better than Group 2 (figures 17 and 18). However, the independent groups t-test that was carried out to make comparisons between the performances of the two groups showed that the results did not reflect any significant difference between the performance of the two groups. At the same time, the results achieved by every group were similar to previous results which confirms the scores achieved in Exam 3.
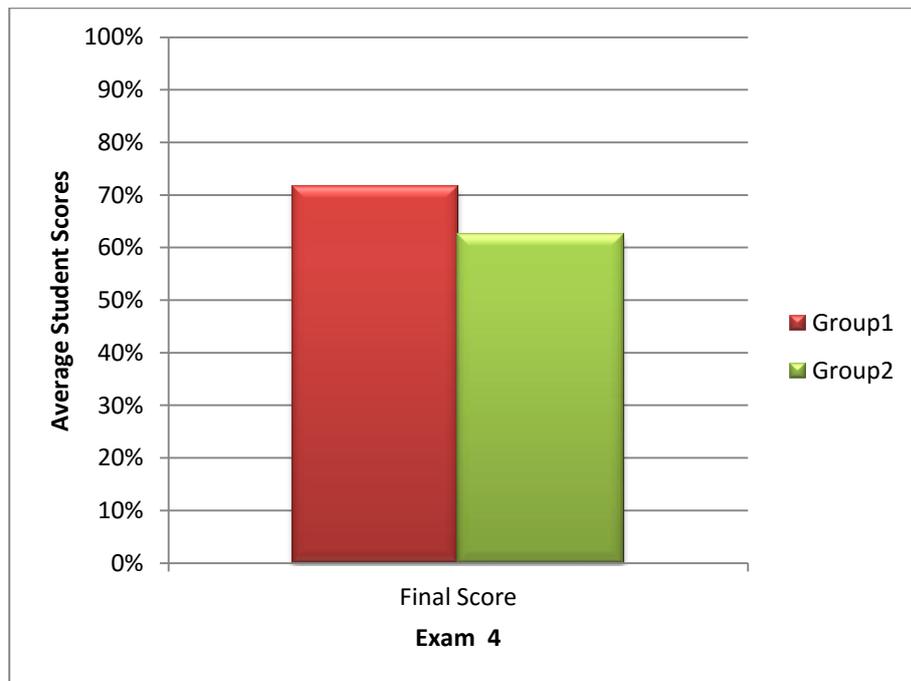
Figure 17: a comparison between Group 1 and Group 2 in Exam 4 after the experiment.
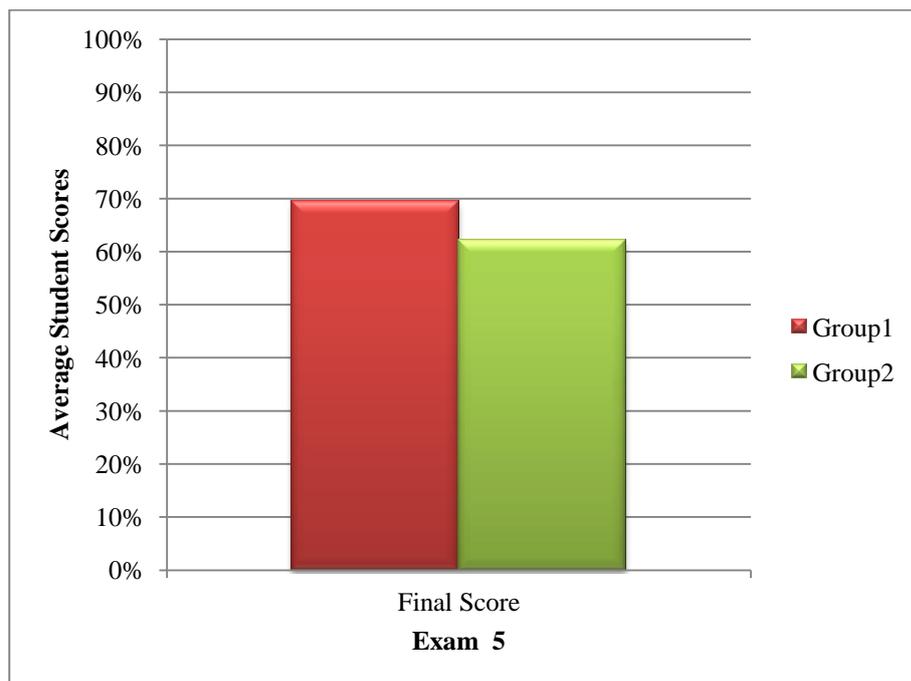
Figure 18: a comparison between Group 1 and Group 2 in Exam 5 after the experiment.

The results of this study show that the two different teaching methods were helpful in (re)setting the verb-raising parameter from Arabic to English in Yes/No questions formation, but not in adverb placement. There was a syntactic priming effect for ungrammatical adverb placements, but there was no such effect for ungrammatical

Yes/No questions. Syntactic priming of ungrammatical adverb placements led to syntactic satiation with the group of second language learners taught using an implicit teaching method. On the other hand, syntactic priming did not lead to syntactic satiation with the group that was taught using the explicit Grammar Translation method.

Conclusions

This research study aimed to explore arguments for many inquiries concerning, the evaluation of explicit teaching used in teaching English as a second language in Libya, the relationship between syntactic satiation and syntactic priming, and parameter (re)setting. As was explained earlier, the study was trying to evaluate the advantages of explicit grammar teaching in parameter (re)setting with using syntactic satiation and syntactic priming as tools in this evaluation. In other words, this study aimed to test the possibility of developing tests for the effectiveness of teaching methods based on ideas about syntactic priming and syntactic satiation.

The study found that the explicit and implicit teaching were to some extent helpful in the process of (re)setting parameters from their L1 value to their different L2 value. Evidence was found that the two methods were partially helpful in building knowledge of Yes/No questions formation which is one of the properties associated with the verb raising parameter in English. On the other hand, they were less helpful in building such knowledge in the other taught property of verb-raising parameter which is adverb placement. The participants of the explicitly taught group and the other participants in the implicit group were able to (re)set the verb raising parameter from their L1 value to its different English value in Yes/No questions formation more effectively than in adverb placement.

This result is similar to the findings of Muneera and Wong (2014: 210) who concluded that 'L1 Arabic speakers learning English as L2 exhibited ...difficulty with negation in finite contexts, S Adv V constructions, and S FQ V orders' which was taken as evidence that 'resetting the English verb movement parameter seemed to be problematic for the adult Arabic learners'. However, the findings of this study add to

the findings of Muneera and Wong by providing evidence that the adult Arabic speakers learning English did not have difficulty with another property associated with verb movement parameter in English, namely Yes/No question formation.

This study has not come to a clear conclusion about which method was more effective. The Grammar Translation method and the implicit Direct method were both helpful in the parameter (re)setting process in one area (Yes/No questions) but not in another (adverb placement). However, the implicit method was more effective in improving the participants' levels after teaching. The results that refer to a partial parameter (re)setting process may lead to the conclusion that the positive evidence only was not helpful enough to (re)set this parameter from L1 to L2 value. The case might be different when considering negative evidence in language classrooms which needs to be tested in a further study.

The two teaching approaches were effective in building knowledge of Yes/No question formation which did not change as a result of syntactic priming of ungrammatical structures during the reading phase. On the other hand, the participants in the two groups were affected by ungrammatical primes when adverbs were placed in an ungrammatical way in English sentences. This means that evidence was found for a syntactic priming effect with regard to some ungrammatical structures, while no such effect was found for other ungrammatical structures.

Thus, the results of this study are similar to the results of Mohamed (2014: 35) who concludes that 'a mixed approach of inductive and deductive instruction with various activities' can be 'very effective in teaching English as a foreign language in Libya'. This conclusion is also explained by MacWhinney (1997: 278) who comes to the conclusion that 'students who receive explicit instruction, as well as implicit exposure to forms would seem to have the best of both worlds. They can use explicit instruction to allocate attention to specific types of input'. This study recommend using

both explicit and implicit teaching methods in the language classroom. Ellis (2008: 125) has this point of view by saying that 'with regard to language pedagogy, there is now greater consensus in the acknowledgment of the separable contributions of explicit and implicit language learning, and it is more usual to hear of the necessity of a balanced learning curriculum'.

The fact that the findings of this study showed that the participants were affected by priming of ungrammatical structures makes these results different from Luka and Barsalou (2005), Sprouse (2007) and that of Francom (2009) who found a syntactic priming effect for grammatical sentences only as there was 'a general lack of evidence for priming of anomalous syntactic structures' (Francom 2009:20). However, other findings of this study confirm the findings of those previous studies in that it found no syntactic priming effect for ungrammatical Yes/No questions. On the other hand, the result that there was a syntactic priming effect of ungrammatical structures (concerning adverbs placement here) confirm the results of Snyder (2000) who found such an effect for the ungrammatical structures.

Regarding the relationship between syntactic satiation and syntactic priming, the findings of this study were similar to those of Luka and Barsalou (2005) in that it showed that the participants rated sentences as grammatical because they had read them earlier. However, this was noticed with the participants in group 2 and not with the participants in group 1. It was mentioned before that there was a syntactic priming effect of the ungrammatical adverb placements noticed with the participants in the two groups. However, this syntactic priming has caused syntactic satiation effect in the performances of the participants in group 2, but this syntactic priming effect did not lead the participants in group 1 to change their previous responses in acceptability judgement task 2. This means that syntactic priming of ungrammatical adverb

placements resulted in syntactic satiation with the group of the participants taught implicitly, but not with the other group that was taught explicitly.

This leads to the conclusion that syntactic priming of ungrammatical structures has led to syntactic satiation effect with one group of the participants and not with the other. This finding can be taken as an instance of a syntactic satiation effect happening as a result of syntactic priming of ungrammatical structures. This agrees with Sprouse (2009: 330) who suggests that 'satiation might just be a token of syntactic priming'. However, syntactic priming of ungrammatical adverb placement did not lead to syntactic satiation with the participants in the explicitly taught group.

The fact that there was a satiation effect in sentences with wrong adverb placement but not with Yes/No questions confirms the finding of Snyder (2000: 580) who concludes that satiation effects do not happen for all sentence types which means that 'satiation is not an across-the-board phenomenon affecting all sentence types equally' and that satiation effects 'were specific to certain sentence types'. Moreover, that there was a satiation effect in sentences with wrong adverb placement but not with Yes/No questions also confirms the findings of Francom (2009: 580) who concludes that satiation effects do not happen for all sentence types and who explains this fact by making a distinction between the types of these violations. In this case the idea that Yes/No question violations were not susceptible to satiation may be explained in light of Francom's hypothesis (2009: 96) by assuming that such violation is a 'strong' violation, not a 'weak' violation as the case with adverb placements in this study.

However, Crawford (2012) suggested that the fact that satiation does not affect all sentence types equally was taken as evidence against the idea that satiation is an instance of syntactic priming. What confirms this assumption from the findings of this study is that syntactic priming affected the participants in the two groups, but led to syntactic satiation in the performance of the participants in only one group. This may

add to the previous argument by Crawford (2012) as it raises some concern on the idea that syntactic satiation is an instance of syntactic priming.

The previous conclusions on syntactic priming effects arising for some ungrammatical structures but not others, and the conclusions about the relationship between syntactic satiation and priming refer to the effect of using these phenomena in the field of second language acquisition research. The findings of this study confirm using these two phenomena in evaluating second language teaching. Nevertheless, they do not help sometimes in getting clear cut results about which teaching approach can lead to building better knowledge of the second language grammar. In spite of this, however, the use of experimental syntax in evaluating second language teaching seems to be helpful in giving some insight on the different stages of L2 teaching. Moreover, these techniques help in evaluating the kind of L2 knowledge that comes as a result of the L2 teaching process.

In addition to providing new evidence regarding the usefulness of explicit grammar teaching, this study also constitutes a case for using satiation in the service of second language acquisition research. However, further research needs to be done to find some answers to a number of enquiries raised here on the effectiveness of using syntactic priming and syntactic satiation as diagnostic tools in second language classrooms. It needs to be investigated whether it will lead to different results if the first language and the second language of the participants have the same value of verb-raising parameter.

The fact that the participants were able to (re)set the verb raising parameter in Yes/No questions and build a solid knowledge of it, while they were not able to do the same with adverb placement needs more investigation. This result that the learners were able to (re)set verb-raising parameter in Yes/No questions formation and not in adverb placement sheds light on the need to test if they can (re)set this parameter

concerning other characteristics associated with it such as negation and other properties. On the other hand, it needs to be tested whether including negative evidence in the classroom can lead to different results. Such further investigation may help to know whether presenting the ungrammatical structures as being not correct can prevent the participants from syntactic priming of such ungrammatical forms once encountered in reading texts.

The number of the subjects who participated in this study was very small, and as was explained before, that was because they were the only students who studied in the Department of Media at the time when the experiment was conducted. Further research needs to be done with larger numbers of participants which may lead to different results and which may shed light on different aspects of the tested phenomena. The fact that this study has not come to clear cut results about which teaching method was more effective may shed light on the need for more research to investigate the role of awareness and noticing of L2 input in second language acquisition. The degrees of attention to language forms needed if acquisition of L2 intake is to take place need some further research.

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Appendix 1

To whom it may concern

11 December 2011-12-10

Dear Sirs,

This is to certify that Mrs. Aisha Fathi Abugharsa has been given permission by the
Department of English in Misurata University to carry out her field study which focuses
on English language teaching in Libya. The researcher has been given permission to work
with some of the university students who are taught English language as a general subject
in the Faculty of Arts as participants in her study.

Mr. Mohamed Elsaghayer

Head of the Department of English language

Faculty of Arts

Misurata University

Misurata, Libya

masghiyer@yahoo.com

Appendix 2

Information for Libyan participants

<div dir="rtl">

معلومات للمشتركين فى الدراسة

</div>

Dear Participant:

This research study aims to evaluate some of the techniques followed in teaching English

language in Libya. It will use data and information from you and this will be

confidential. This data may be used for subsequent publications in the future and your

identity will not be indicated at any time. You can make sure that you have the right to

withdraw from the project at any time without any penalty and any obligation to explain

reasons for doing so.

Thank you for your cooperation.

The researcher.

<div dir="rtl">

عزيزى المشترك:

هذه الدراسة البحثية تهدف الى تقييم بعض طرق التدريس المتبعة لتدريس اللغة الانجليزية فى ليبيا. سيتم استخدام بعض

المواد و المعلومات منك لغرض الدراسة و هذه المعلومات ستبقى سرية. كما يمكن ايضا ان تستخدم هذه المعلومات

لاحقا فى بعض المطبوعات وللك ان تتاكد انه لن يتم الكشف عن هويتك فى اي وقت. يمكنك ان تتاكد من انك تستطيع

التوقف عن المشاركة فى هذا البحث فى اى وقت دون الحاجة لشرح الاسباب.

شكرا على تعاونك.

الباحثة

</div>

Consent Form for Participants

Dear Participant,

I am working on a research study that aims to evaluate some of the techniques followed

in teaching English language in Libya. I am interested in your intuitions as a native

speaker of English language towards the grammaticality of some English sentences.

This will help in making a comparison between your responses and the responses of my

Libyan subjects.

I will use your reactions as data and this will be confidential.

Thank you for your cooperation.

The researcher.

Appendix 3

Signature of Fieldworker (Student/Staff)	Aishe Fathi Abughaisa *Aisha*	Date	25. 11. 2011
Signature of Student Supervisor	Billy Chr	Date	5. 12. 11

APPROVAL: (ONE ONLY)

Signature of Director of Programmes (undergraduate students only)	....	Date	....
Signature of Research Degree Co-ordinator or Director of Programmes (Postgraduate)	....	Date	....
Signature of Research Centre Head (for staff fieldworkers)	....	Date	....

FIELDWORK CHECK LIST

1. Ensure that **all members** of the field party possess the following attributes (where relevant) at a level appropriate to the proposed activity and likely field conditions:

- ☑ Safety knowledge and training?
- ☑ Awareness of cultural, social and political differences?
- ☑ Physical and psychological fitness and disease immunity, protection and awareness?
- ☐ Personal clothing and safety equipment?
- ☑ Suitability of fieldworkers to proposed tasks?

2. Have all the necessary arrangements been made and information/instruction gained, and have the relevant authorities been consulted or informed with regard to:

- ☑ Visa, permits?
- ☑ Legal access to sites and/or persons?
- ☐ Political or military sensitivity of the proposed topic, its method or location?
- ☐ Weather conditions, tide times and ranges?
- ☐ Vaccinations and other health precautions?
- ☑ Civil unrest and terrorism?
- ☐ Arrival times after journeys?
- ☐ Safety equipment and protective clothing?
- ☐ Financial and insurance implications?
- ☐ Crime risk?
- ☐ Health insurance arrangements?
- ☑ Emergency procedures?
- ☑ Transport use?
- ☑ Travel and accommodation arrangements?

Important information for retaining evidence of completed risk assessments:

Once the risk assessment is completed and approval gained the **supervisor** should retain this form and issue a copy of it to the fieldworker participating on the field course/work. In addition the **approver** must keep a copy of this risk assessment in an appropriate Health and Safety file.

RP/ec 15/09/08

Appendix 4

Teaching Syllabus and plan

Time allowed for this course: 54 hrs (28weeks)

Total: 30 hrs

Week	Teaching Plan	Notes	Time
1	Introduction/Formative Exam	An exam will be carried out in this first class to have an idea about the subjects' previous <u>information?</u>	2hrs
2/3	Present simple tense/changing sentences into negatives and Yes/No questions.	-English verbs do not raise in the formation of Yes/No questions. Only correct sentences with the use of auxiliary verbs will be illustrated. - Examples will include sentences with adverbs used with present simple tense such as always, often, sometimes.etc in their correct place in an English sentence to the left of the main verb.	4hrs
4/5	Past simple tense/ changing sentences into negatives and questions	Formation of Yes/No questions will be presented through positive evidence as in previous section.	4hrs

6/7	Present continuous and past continuous tense and their use in English / changing sentences into negatives and questions		4hrs
8/9	Perfect tenses and their use in English language		4hrs
10	2 hour exam + Grammaticality Judgement task1	-This exam will take the form of two papers. The first paper will contain an ordinary formative test such as multiple choice questions and gap-fillings etc. The second paper will be a grammaticality judgement task asking subjects if certain sentences are true or not.	2hrs
11/12	Reading tasks (relevant to students specialization) Not discussed with students? students did not ask questions?	The tasks will contain ungrammatical forms of Yes/No questions and adverbs placed on the right of the main verbs. These forms were not presented as ungrammatical while introducing the rules in the previous lectures and it will not be referred to as ungrammatical during the reading as the focus will be on reading comprehension, new vocabulary and developing reading for a purpose skill.	4hrs

13/14	Reading tasks (relevant to students specialization)	The same procedure that is illustrated in notes of week 5.	4hrs
15/16	Reading tasks (relevant to students specialization)		4hrs
17	2 hour exam + Grammaticality Judgement task 2	This exam will be done in the same way as with the previous exam in week 10. In addition to use a formative exam, an acceptability judgement task will be used to investigate whether subjects' intuitions will be changed as a result of syntactic satiation.	2hrs
18/19	Countable and uncountable nouns and the use of articles in English.		4hrs
20/21	Using adjectives in making comparisons and changing adjectives into adverbs.		4hrs
22/23	English prepositions.		4hrs
24	2 hour exam (exam 4)	The purpose of doing this and the next exam is to evaluate the general knowledge of the subjects after the experiment.	2hrs
25	2 hour exam (exam 5)		2hrs

26/27	Revision of previous reading tasks with correcting ungrammatical sentences.	This aims to make sure that learners will not build their knowledge on ungrammatical structures.	4hrs
28	Revision		2hrs

Appendix 5

Exam 1(introductory)

Time allowed: 30 minutes

Answer these questions:

Q1. Say whether you consider these sentences as acceptable (✓) or not acceptable (X)

1. Ali goes to school every day.   (   )

2. He visits sometimes his friends.   (   )

3. Does he speak English well?   (   )

4. He studies very hard to get high marks.   (   )

5. Asks he any questions?   (   )

6. They often watch TV on weekends.   (   )

Q2. Change these sentences into negatives:

1. Asma travels to London every year.

....

2 . She is a good student.

....

3.Ali bought a new book.

....

4.Ahmed studies very hard.

....

5.They play tennis every weekend.

....

Q3. Change these sentences into Yes\No questions:

1.Alia helps her mother.

....

2. My sisters work very hard.

....

3. Amal went to the cinema yesterday.

....

4. They are very strong.

....

6.I study English.

....

Q4. Put the adverbs between brackets into the correct place in these sentences:

1.Yusuf eats grapes.   (often)

....

2.My friends give me presents.   (sometimes)

....

3.I help other people.   (usually)

....

4.Laila goes to school on time.   (usually)

....

5.Our teacher makes any mistakes.   (rarely)

Appendix 6

Exam 2(After teaching)

Answer these questions:

Q1. Put the verbs between brackets into the correct form to complete these sentences:

1.   I (get up) ....at 8 oclock everyday.

2.   Salma (be) ....absent yesterday.

3.   Omar usually (work).......................for about six hours a day.

4.   They (visit)..............................us every weekend.

5.   He (see) ....his friend by chance last week.

6.   I (go)....................................to UK six years ago.

7.   We (be)...............................very busy last night.

8.   A butterfly (be) ....an insect.

9.   Butterflies (be)..........................very beautiful insects.

10.   The sun (set)..........................in the west.

Q2.Add frequency adverbs in *italics* to the following sentences:

1.*often*   I help my friends at school. be is a raising verb in english

....

       ....

2.*always*   Salma is at the library in the evenings.

....

3.*always*   Salma helps the librarian to classify books.

....

4.<u>usually   My parents are at home in the</u> weekends.

....

5.*sometimes*   I drink coffee in the morning.

....

6.<u>*sometimes*   I am busy in the evening.</u>

....

      ....

7.*often*   The teacher drives his car to school.

....

Q3.Change these sentences into   a) negatives   b)questions:

1.   Ahmad is a good student.

a)   ....

b)   ....

2.   We work in a very big factory.

a)   ....

b)   ....

3.The students were very active last night.

a)...

b)...

4.Sami plays football every week.

a)...

b)...

5.Huda drank a cup of tea yesterday morning.

a)...

b)...

Grammaticality Judgement Task 1 (After teaching)

Write your immediate reaction to the following sentences by writing whether you

consider each sentence as <u>grammatically acceptable</u> this is problematicin English

or not:

1).My friends come to visit me every week.   (   )

2).My sister sometimes invites her friends for parties.   (   )

3).Did Ahmed buy a boat?   (   )

4).She usually goes to school on time.   (   )

5).Works he very hard?   (   )

6).I goes to school everyday.   (   )

7).Go you with your friends?   (   )

8).The moon revolves around the earth.   (   )

9).Bought you that car?   (   )

10).Does he have any new photos?   (   )

11).Omar likes going to cinemas.   (   )

12).He spoke very loudly in the party last night.   (   )

13). He drives fast his new car.   (   )

14).He broke his leg in a car accident.   (   )

15). My mother drinks sometimes coffee.   (   )

16). Does she drink tea?   (   )

17). Went they to the cinema last night?   (   )

18). She work very hard.   (   )

19). Mariam gave quickly her umbrella to the old lady.   (   )

20). Gave she her coat too?   (   )

21). My father reads slowly the story to the children.   (   )

22). I visit my grandparents every week.   (   )

23). I help usually them to clean their garden.   (   )

24). Did they help you?   (   )

Appendix 7

Exam 3(After Reading)

Q1. The verb *do* can be a main verb (M) or an auxiliary verb (A). Mark these sentences M or A according to the use of *do:*

1). Ali does not live in London.   (   )

2). Did you see him yesterday?   (   )

3). Where did you go last year?   (   )

4). I do my homework every evening.   (   )

5). Laila does her best to get the prize.   (   )

6). Does she work very hard?   (   )

7). Omar did not tell the truth.   (   )

8). Did you agree with him?   (   )

Q2. Change these sentences into   a) negatives   and   b) Yes/No questions:

1). Sami goes to college every day.

a)...

b)...

2). Ali helped his mother last night.

a)...

b)..

3). Our team played football with the other team last week.

a)..

b)..

4). They like to play with us every day.

a)..

b)...

5). Amal speaks English very well.

a)..

b)..

6). Her friends visit her every week.

a)..

b)...

7). Ali studies English at school.

a)..

b)..

8). We bought a big house near the beach.

a)..

b)..

Q3. Put the verbs between brackets into the correct form and in the correct place of every sentence.

1). Salma often very hard.   (work)

....

2). I to London last summer.   (go)

....

3). My parents always poor people.   (help)

....

4). I sometimes the train.   (miss)

....

5). The sun in the east.   (shine)

....

6). Ahmad a new house yesterday. (buy)

....

7). My mother usually my opinions.   (like)

....

8). I rarely any questions.   (ask)

....

Grammaticality Judgement Task 2 (After reading)

Write your immediate reaction to the following sentences by writing whether you consider each sentence as grammatically acceptable in English or not:

1). He drive his car very carefully.   (   )

2). I often help my parents

3). Did you watch TV last night?   (   )

4). Likes Ahmad playing football?   (   )

5). She rarely asks for help.   (   )

6). We like helping other people.   (   )

7).Asks she any one to help her?   (   )

8). Do you your work very well?   (   )

9). Water always boils at 100°C.   (   )

10). Worked you very hard yesterday?   (   )

11). Does Ali have a new book?   (   )

12). Laila travels to Paris every year.   (   )

13).She buys always new clothes.   (   )

14).She brought me a nice present last summer.   (   )

15). Omar asks sometimes strange questions.   (   )

16).Does he ask you?   (   )

17).My friends visited often me   (   )

18). Do they visit you every week?   (   )

19). Ahmad ate rapidly his breakfast.   (   )

20). Ate he all his food ?   (   )

21). Our teacher explains slowly the lesson.   (   )

22). My neighbours work very hard every day.   (   )

23). Salma helps usually her friends.   (   )

24). The sun shines in the east.   (   )

Appendix 8

Exam 4(After Reading)

Answer these questions:

Q1. A) Change these sentences into negatives:

1.   I am a student.

....

2.   I study English language.

....

3.   Laila bought a nice bag last week.

....

4.   She likes shopping with her friends.

....

5.   It is very cold today.

....

6.   I travelled to Turkey last month.

....

7.   It was very cold there.

....

8.   I wrote some articles about that visit.

....183

9.   I ate an apple this morning.

....

B) Change the verbs between brackets into present simple tense to complete this short

    text about ocean waves:

Ocean waves (be).............................interesting. In an ocean wave, water

    (move)..........................up and down, but water (not,

    move)...........................forward. This movement (be)...........................the same as

    the movement you can see in a rope. I (like)....................................watching

    ocean waves every morning and I (be)...................................... very interested in

    studying facts about them.

 (15 marks)

Q2. A) Put the verbs between brackets into the correct tense to complete these

    sentences:

1.   I (get up).. at seven o'clock every day.

2.   My sister (get up)....................................at eight o'clock every morning.

3.   She (get up)....................................at nine yesterday.

4.   She (be)............................late yesterday morning.

5.   She (drink)...............................a cup of tea every evening.

6.   The water (boil).......................at 100C .

7.   It (freeze) ....at 0C.

8.   I (be) ....in Tripoli three days ago.

B) Rewrite these sentences correctly:

1. Do you are a student?

....

2. Lives he in Libya?

....

3. Asma watch TV every evening.

....

4. Ahmad comes usually to class on time.

....

5. I lives in Misurata.

....

    ....

6. Go you to work every day?

....

    ....

7. My parents help often me to do my homework.

....

    ....

 (15 marks)

Q3. A) Choose the correct completion:

1.   Mariam ....know English

A.   Isn't   B. Doesn't   C. Don't

2.   ....Mariam speak English?

A.   Is   B. Does   C. Do

3.   ....Mariam a student?

A.   Is   B. Does   C. Do

4.   She ....a job.

A.   no have   B. no has   C. does not have

5.   ....Ahmad work as a teacher?

A.   Works   B. Does   C. Is

6.   They ....speak the same language.

A.   are not   B. does not   C. do not

7.   .... they study English?

A.   Do   B. Are   C. Study

8.   Omar and Ahmad ....students at this school.

A.   be   B. is   C. Are

B) Change these sentences into Yes/No questions:

1. Ali is a student.

....

2. He studies English.

....

3. His friends are students.

....

4. They study English.

....

5. They went to UK last year.

....

6. They were very happy during that visit.

....

7. I taught them English grammar last semester.

....

(15 marks)

Appendix 9

Exam 5(After Reading)

Q1. A) Put the verbs between brackets into the correct forms:

1.   Amina (write).................a short story two years ago.

2.   I (be)..................in Benghazi yesterday, but I (be)..................in Misurata today.

3.   Sugar (dissolve).............................in water.

4.   My mother (cut).................her finger with a knife last night and she

        (put)...............a plaster on it.

5.   They (work)........................very hard every day.

6.   I (sleep).............................very early last night.

7.   Ahmad (visit).........................his grandmother every weekend.

8.   Ann (eat)......................some biscuits with us yesterday morning.

B) Correct the mistakes in the following sentences:

1. Ali and Ahmad is bus drivers.

....

2. Sleeps your roommate with the window open?

....

3. Sami drink always coffee in the mornings.

....

4. Drive you your car very fast?

....

5. I no know Laila.

....

6. Amira write carefully an article last week.

....

7. Omar does not speakes French. He speak English.

....

(15 marks)

Q2. Change these sentences into Yes/No questions:

1. Omar asks a lot of questions in the class.

....

2. Ali bought new clothes last week.

....

3. Mr. Anderson taught us last year.

....

4. Sana studies Media in the university.

....

5. My sister cleaned the kitchen this morning.

....

6. She is a very good cook.

....

7.   We love her cooking.

....

8.   I drive my car very fast.

....

Q3. A) Choose the correct completion:

1.   There ....many great inventions in our modern life.

A)are   B)is   C)am

2.   Television.............................one of the greatest inventions in our modern life.

A)is   B)are   C)do

3.   Many people..........................hours in front of TV screen.

A)spends   B)are   C)spend

4.   I ....like watching TV for long time.

A)does not   B)do not   C)am not

5.   My sister.................................watching TV very much.

A)like   B)do not   C)likes

6.   ....she a student?

A) is   B)am   C)are

7.   She.......................................Media.

A)   studies   B)is   C)study

8.   I ....not like watching classic films.

A)was   B)do   C)did

Q3. B) Correct the grammar mistakes in the following sentences:

1. I is a very good student.

....

2. Goes you with your friends to school?

....

3. Mary send often many letters every week.

....

4. Works Laila very hard?

....

5. I likes working with children.

....

6. Ali eats an apple yesterday.

....

7. She do not works very hard.

....

(15 marks)

Appendix 10

Advantages of Television

Television offers always the viewing public a number of benefits. Firstly, it is a cheap and accessible form of entertainment for the masses. Not everyone can afford to go to the theatre or cinema. Secondly television provides obviously us with a window on the world. We can see and experience many things that normally would not be possible. Let us take the Olympic Games as an example. Most people have neither the time, nor the financial resources to travel to see the Games.

In conclusion, it can be said that there are many advantages of TV. The benefits of having instant access to entertainment and information on a 24 hour basis, are far greater than any disadvantages. There certainly are areas for improvement, not least of all in the quality and range of programmes offered always by some of the new channels, but overall television is an excellent invention.

Answer these questions:

1. What is the most important advantage of TV? Why?
    ....
    ....
    ....

2. Are there any disadvantages of TV?
    ....
    ....
    ....

3. What is the role of TV in modern life?
    ....
    ....
    ....

Falsified Major Media Reports on Libya

By Stephen Lendman

Major media specialize usually in what they do best: truth inversion, not doing what journalists are supposed to do-their job ... With Libya's National Transitional Council (NTC) falling apart and rebel forces in disarray, today's headlines belie clearly the truth, reported by independent journalists and other sources.

On August 16, Lizzie Phelan's Libya diary 'cleared up the latest media rubbish on Libya'' saying:

''Gaddafi forces liberated entirely the rebel-held town of Misrata. 'Last night, the Libyan army moved quickly into the centre of the city, and now the rebels are trapped between Misrata and Tawergha''

About three-fourths of the city, including its port is secured. 'which was a lifeline' for shipping rebels arms and other supplies.

At a press conference attended by around 200 tribes (including the four largest comprising half the population). Libya's media spokesman, Dr. Mousa Ibrahim confirmed clearly it........Major media reports lie, although pockets of rebel resistance remain. Nonetheless, they are 'isolated and surrounded by the Libyan army and tribes'

Falsified major media reports stand in contrast to 'Libyan tribes who know certainly their land with great intimacy'.

1. Can you classify this article as having true information?
2. Translate the underlined words into Arabic.

How can you change the contents of this articles by changing some sentences into negatives?

History of Movies

There are ten things you did not know about the beginning of the film industry:

1. Silent films use usually 16 frames (or images) per second, and sound films use 24.
2. William Kennedy Laurie Dickson created the first motion picture camera in New Jersey, USA, in 1888.
3. The films were on circular holders called 'reels'.   Each reel lasted about 14 minutes. Early films fit on one reel, but later films used several reels.
4. Many of the early film companies were French. French filmmaker George Melies was one of the first people to use films to tell stories. In 1902, he made successfully a very important film of the Jules Verne story A Trip to the Moon. It was one reel long and was the first 'international' film.
5. Another Frenchman, Charles Pathe, developed a new studio camera, started gradually five international production companies, and opened the world's first luxury cinema in Paris in 1906. At the same time, their rival, Gaumont, also French, had the industry's first woman director, Alice Guy.
6. New Yorker Edwin S. Porter was the first person to use editing to help tell a story on film. His 1903 film *The Great Train Robbery* used many new techniques, including moving the camera, which Melies never did.
7. In the United States, early film theatres were called 'nickelodeons' and were for working-class people. A nickel is a very small amount of money, and these film theatres showed often one hour of film for a very low price.
8. The first films made from more than one reel were in the United States in 1907. Soon they were called 'features', an expression meaning 'a headline event'.
9. The film that started the silent feature film craze was a 1912 nine-reel film by Italian director Enrico Guazzoni.
10. Feature films caused gradually the death of the nickelodeon. More people started to watch feature films in a more comfortable place, and so the movie palace was born. By 1916, there were more than 26,000 movie palaces in the United States.

A) Answer these questions:

1. How long were the early films?

....

2. Where did the film industry start?

....

3. When did Dickson create the first motion picture camera?

....

4. When did Melies make A Trip to the Moon?

....

5.   When did feature films start?

....

6.   Who first used films to tell stories?

....

7.   Who first used editing and moved the camera around?

....

8.   Who was the first woman film director?

....

B) Read the text again and find:

1) Two different names of early cinemas.

....,...

2) Two different jobs in the film industry

....,...