Second language acquisition of the semantics of focus-sensitive presupposition triggers in English and Persian

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ABSTRACT

One of the differences between first language (L1) acquisition, which is always successful, and second language (L2) acquisition, where convergence on target-like representations is not always possible, is that L2 learners are already equipped with the fully established system of their L1. In fact, a great body of literature has shown that L2 learners demonstrate systematic errors in the L2 which can be attributed to the properties of their L1. The present study contributes to this area of research on the role of L1 transfer by investigating the L2 acquisition of semantic properties related to the word *even* across English and Persian. In particular, focus will be on the additive presupposition of *even* and how it is manifested in the two languages. The study will consider two learning directions: L1 Persian L2 English and L1 English L2 Persian. These two languages differ in the ways the additive presupposition is encoded: In English, the additive presupposition of *even* is triggered only when *even* is used in prenominal syntactic position. I assume that this presupposition is covertly expressed because it is not encoded in an overt lexical item and is constrained by syntax. Besides, the expression of this presupposition is indirect, because it is a secondary function of *even*, assuming that this particle is used to express surprise, unexpectedness, or unlikelihood primarily. Therefore, the assumption will be that L1 English L2 learners of Persian start off by a covert and indirect system of encoding the additive presupposition from their L1. L1 Persian L2 learners of English, on the other hand, start off by an overt and direct system of encoding additivity: the additive presupposition is lexicalized on an additive operator *ham* which overtly and directly triggers this presupposition.

In this study, the Feature Reassembly Hypothesis (FRH) (Lardiere 2005, 2008, 2009, and subsequent work) was implemented as the theoretical standpoint to investigate the extent to which L2 learners in both languages fail and/or succeed at acquiring the semantic system of the L2s, as described above. This theory assumes a mapping stage in L2 acquisition where learners map their L1 feature specifications onto the L2, as well as a reassembly stage triggered by inconsistencies between the L2 input and the L1, where the L2 learners reconfigure their feature organizations onto those of the L2. Felicity judgment experiments were designed and administered on two proficiency learner groups, intermediate and advanced, in order to monitor L2 development in both stages of acquisition. The results indicated strong lingering L1 effects in both proficiency groups for both L2 learning directions which were identified as sources of difficulty in converging on target-like feature configuration. In particular, the L1 Persian L2 learners of English demonstrated that dissociating from an L1 feature which is overtly expressed in favour of acquiring an L2 covert system of encoding the same feature presents considerable challenge to the L2 learners. In addition, the L1 English L2 learners of Persian showed that it is not difficult to learn the absence of an L1 covert and indirect encoding system in the L2. It is, however, challenging to acquire the overt L2 system when their native language offers an indirect way of expressing the same feature.

RÉSUMÉ

Une des différences entre l'acquisition d'une langue première (L1), un processus qui est toujours réussi, et l'acquisition d'une langue seconde (L2), où l'apprenant ne réussira pas forcément à acquérir les représentations linguistiques ciblées, est que les apprenants en L2 sont déjà équipés du système de leur L1. En fait, de multiples études ont montré que les apprenants font des erreurs systématiques dans leur L2 qui peuvent être attribuées aux caractéristiques de leur L1. L'étude actuelle contribue au domaine du transfert en L1 en étudiant l'acquisition – en L2 – des propriétés sémantiques liées au mot *even* 'même' en anglais et en perse. En particulier, l'accent sera mis sur le présupposé additif de *even* et comment ce présupposé se manifeste dans les deux langues. L'étude considérera deux cas d'apprentissage: les locuteurs natifs du perse (L1) qui sont des apprenants de l'anglais (L2) et des locuteurs natifs de l'anglais (L1) qui sont des apprenants du perse (L2). Ces deux langues diffèrent par rapport à la façon dont le présupposé additif est déclenché: En anglais, le présupposé additif de *even* n'est exprimé de manière explicite que lorsque *even* est employé en position prénominale. Je présume que ce présupposé est exprimé de façon muette parce qu'il ne correspond pas directement à un mot prononcé et que l'on observe des contraintes syntaxiques. De plus, ce présupposé est communiqué indirectement parce que c'est une fonction secondaire de *even*, en supposant que cette particule est principalement employée pour exprimer la surprise, l'inattendu ou l'improbabilité. Par conséquent, l'hypothèse sera que les locuteurs natifs de l'anglais débuteront leur acquisition du perse avec un système d'encodage indirect et muet du présupposé additif en raison d'un transfert de leur L1. D'autre part, les locuteurs natifs du perse interprèteront en anglais le sens de *even* comme s'il se trouve un système qui transmet le présupposé

additif de façon explicite en anglais: le présupposé additif en perse est communiqué par le mot *ham.*

Dans cette étude, l'hypothèse de réassemblage de traits (*Feature Reassembly Hypothesis*; Lardiere 2005, 2008, 2009 et travaux ultérieurs) a été utilisée comme point de vue théorique pour expliquer pourquoi les apprenants d'une L2 quelconque échouent et réussissent à acquérir le système sémantique de cette L2, comme décrit ci-dessus. Cette théorie prend pour acquis l'existence d'une étape dans l'acquisition d'une L2 où les apprenants créent des correspondances entre les traits de leur L1 et ceux d'une L2, ainsi qu'une étape subséquente lors de laquelle les erreurs et les incohérences causées par des tentatives de correspondances erronées sont résolues. Des expériences vérifiant les jugements de félicité ont été administrées auprès de deux groupes d'apprenants de niveau intermédiaire et avancé, le tout afin d'examiner le développement de la L2 lors des deux stades d'acquisition. Les résultats indiquent de forts effets de la L1 qui persistent dans les deux niveaux d'acquisition – et en apprenant l'anglais, et en apprenant le perse. Ces résultats suggèrent que converger sur une représentation sémantique ciblée peut être difficile en raison d'effets de la L1 tenaces. En particulier, les locuteurs natifs de l'anglais apprennent relativement facilement que le système anglais ne fonctionne pas pour interpréter les données du perse, mais ils ont une grande difficulté à acquérir le système turc de présupposé additif étant donné que le contraste entre additif et non-additif n'est associé à aucun déclencheur lexical dans leur langue native.

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CHAPTER 1

INTRODUCTION

Is it difficult to acquire a new way of expressing semantic concepts in a second language (L2)? The present thesis attempts to answer this question by exploring the extent to which L2 learners of English and Persian succeed in the acquisition of the different systems these languages have for expressing presupposition, triggered either lexically by the use of a particular morpheme or structurally by the use of a particular syntactic position. Specifically, focus will be on the L2 acquisition of the additive presupposition associated with *even* in English, as exemplified below.

(1.1)   Context: Everyone arrived late at Jenny's party.

   Even HARRY[1]!

(1.2)   a.   Of all the people considered, Harry was the least likely to arrive late.

(Scalar presupposition)

   b.   Other people besides Harry arrived late.

(Additive presupposition)

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[1] Capitalization is used to mark the position of focus.

It is uncontroversial that the presence of *even* in (1.1), contributes some information to the meaning of the sentence 'Harry arrived late'. In particular, upon asserting (1.1), the speaker commits themselves to the truth of (1.2a), called the scalar presupposition, and (1.2b), the additive presupposition. The scalar and additive presupposition are argued to be semantic contributions of *even.*

However, whether *even* always triggers an additive presupposition is debatable. In the following example (from Wagner 2013, 2015), for instance, the presence of *even* in B's utterance implies that there has been more than one winner of the Marathon, which under normal circumstances, cannot be true. Therefore, the use of *even* renders B's utterance odd.

(1.3)   A: Is it really true that someone from North America won the Marathon?

      B: # *Even* a CANADIAN!

Wagner maintains, however, that if *even* is used in a different syntactic position, e.g. after the noun phrase, as in (4), the additive presupposition disappears, hence felicity of B's utterance in (1.4).

(1.4)   A: Is it really true that someone from North America won the Marathon?

      B: A CANADIAN *even*!

Whether or not *even* contributes an additive presupposition in English, therefore, is attributable to the syntactic position of this particle with respect to the noun phrase is associates focus with. In other words, whether or not *even* expresses additivity in English is contingent upon its syntactic position; the additive presupposition is triggered structurally.

In Persian, the second language of interest in the present thesis, the additive presupposition in contexts which license the presence of *even* in English, such as the context in (1.3), is triggered differently, through the morphological use of an additive particle *ham* which semantically presupposes additivity in the way English *too* does:

(1.5)   Context: Everyone arrived late at Jenny's party.

      hatta hary *ham* dir resid.

      even Harry *too* late arrived.

      'Even Harry arrived late.'

In this thesis, first, I argue that *hatta*, which has always been translated to *even* in word references and pedagogical materials (and vice versa), is not the exact semantic equivalent of *even*. The two particles differ in terms of their semantic import. *Hatta* only contributes the scalar presupposition in Persian. The additive presupposition, when satisfied in context, is triggered lexically by the additive operator *ham*. In contexts such as (1.6), for instance, where additivity is not fulfilled, only *hatta* is used and *ham* renders the utterance odd, as shown in B'.

(1.6)   A: Is it really true that someone from North America won the Marathon?

      B: *hatta* ye kanadai (bord).

          even a Canadian won.

      B':   # *hatta* ye kanadai *ham* bord.

          even a Canadian too won.

In short, the two languages chosen in the present thesis use different strategies for expressing the additive presupposition related to *even*: English uses a syntactic strategy and Persian uses lexical means to encode the additive presupposition.

This thesis will set out to explore the L2 acquisition of the semantic representations of the focus-sensitive presupposition triggers *even*, *hatta*, and *ham* across English and Persian. In particular, the expression of the additive presupposition (associated with English *even*), as explained above, will be operationalized in terms of semantic features (as described by Slabakova 2009, Cho and Slabakova 2014, 2015) encoded in the semantic representations of these particles:

- The expression of the additive presupposition in English is constrained by the syntactic position of *even*. This syntax-semantics interface is featurally encoded in the semantics of *even* by assuming that additivity (ADD) is a covert and indirect feature in English.
- The expression of the additive presupposition in Persian is through a lexical item, the additive operator *ham*. Therefore, ADD is encoded as an overt and direct feature in the semantic representation of this item.

Further, the L2 acquisition of these features will be examined within the premises of the Feature Reassembly Hypothesis (FRH); (Lardiere 2005, 2008, 2009, and subsequent work). Consistent with the great body of literature on L2 acquisition which has shown that (at least) some of the systematic errors in L2 acquisition could be attributed to the influence of the first language (L1; White 1989, 2003, Whong-Barr & Schwartz 2002, Slabakova 2003, among many others), the FRH assumes that L2 learners initially transfer their L1 feature

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representations into the L2 and look for L1/L2 similarities and correspondences in the L2 data (the mapping stage in L2 acquisition). Progressively, as learners develop their L2, the feature bundles are reconfigured/reassembled to match those of the target language (the reassembly stage). Based on the interlanguage architecture predicted by the mapping and reassembly stages of the FRH, the present thesis will lay out certain predictions about the L2 acquisition of ADD across L2 learners of English and Persian at different proficiency stages, intermediate and advanced, and examine those predictions through two experimental studies. The first study will concern L1 Persian L2 learners of English and the second will concern L1 English L2 learners of Persian.

The structure of the thesis is as follows. Chapter 2 will lay out the theoretical background on the status of the additive presupposition associated with *even* in English and *hatta* and *hatta-ham* in Persian and show how these languages differ with respect to the tools used to express this semantic component. First, I will present analyses of *even* in English and conclude, based on results of a pilot experiment on native speakers of English, that the syntactic theory of *even*, as proposed by Wagner (2013, 2015), is perhaps on the right track. Then I will proceed to Persian and propose an analysis of the semantic contributions of *hatta* and *ham* in this language. Chapter 3 will offer an overview of the relevant L2 acquisition theories and focus mainly on the FRH and the empirical testings of this theory which have provided a better understanding of how feature reassembly works. In chapter 4, I will present the results of two experiments that test the predictions of the FRH for Persian L2 learners of English and English L2 learners of Persian. For each learning direction, different proficiency groups will be compared (intermediate versus advanced) in order to better understand how the L2ers perform at the mapping and reassembly stages

of L2 acquisition. Finally, chapter 5 will discuss the main findings in light of the predictions of the FRH as well as conclusions, limitations of the present study, and future research ideas.

CHAPTER 2

FOCUS-SENSITIVE PRESUPPOSITION TRIGGERS IN ENGLISH AND PERSIAN

2.1. Introduction

The present study investigates the second language acquisition of the semantic representations associated with focus-sensitive presupposition triggers in English and Persian. The presupposition triggers of interest are *even* in English and *hatta*, *ham*, and their combination in Persian. In this chapter, I will first introduce the relevant background literature on *even* and its presuppositional contribution in English. Next, I will present an analysis of how the corresponding presuppositions are realized in Persian *hatta*, *ham*, and *hatta-ham* combinations, building up on the existing literature on the semantics of *even*.

2.2. English: *even*

This section will first present some of the theoretical proposals on the semantics of *even* in English. Questions will be raised as to the adequacy of such proposals with respect to explaining new empirical data and eventually a new analysis will be assumed for the semantic contribution of *even* which focuses on the syntactic position of this focus-sensitive item in English (Wagner 2013, 2015). I will then present results from a pilot experiment which confirm the premises of the latter theory.

2.2.1. Introduction

Even is a focus-sensitive scalar item which makes a set of propositional alternatives salient, whose content depends on the position of focus in the clause [1]. The semantic contribution of *even* is that it requires the alternatives to be ordered in a particular way with respect to each other; a salient ordering based on likelihood, expectedness, or noteworthiness. More precisely, *even* contributes (i) the scalar presupposition that its propositional argument, its so-called prejacent, is the least likely alternative among the other alternatives in the set, and (ii) the additive presupposition that at least one[2] of the alternatives in the alternative set other than the prejacent must be true[3]. In (2.1), where C is the set of alternatives, p is the prejacent of *even*, and $\lhd c$ stands for being less likely than, the presuppositional contribution of *even* is represented.

(2.1) $|| \text{ even } ||^{g,c}(C, p, w)$ is defined only if

    (i) $\forall q \in C\ [p \neq q \rightarrow p \lhd c\ q]$ scalar presupposition

    (ii) $\exists q \in C\ [\ q \neq p \wedge q(w) = 1\ ]$ additive presupposition

    If defined, $|| \text{ even } ||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$ (from Crnič 2011)

Thus, a sentence like (2.2) would have the presuppositions in (2.3a) and (2.3b).

(2.2)   Mary *even* called BILL.

(2.3)   a.   Bill was the least likely person for Mary to call.
                                     (Scalar presupposition)

    b.   Mary called someone other than Bill.
                                       (Additive presupposition)

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[1] See Rooth (1985), for a standard approach to the computation of alternative sets.
[2] The additive presupposition has been analyzed both as an existential (e.g. in Karttunen and Peters 1979) and a universal (Crnič 2011). The quantificational force of this component is orthogonal to the purpose of this study.
[3] Following Kripke (2009), I assume that the additive presupposition is anaphoric to a *salient* antecedent alternative.

In what follows, I will first introduce a controversial issue which is much debated in the literature on the semantics of *even*: The status of the additive presupposition of *even*. I then discuss two theories in the literature (Crnič 2011 and Rullmann 1997), which I believe are very much related, that have established an account for the additivity of *even*. I then argue that these theories are not empirically supported by English data. Finally, I present Wagner's (2013, 2015) theory of additivity in the semantics of *even* which I believe best explains the facts about *even* in English. I conclude by adopting Wagner's theory of *even* in this dissertation.

2.2.2. The status of the additive presupposition

As mentioned above, *even* contributes an additive presupposition. Consider the sentence in (2.4) below. This sentence is felt to be contradictory, with focus on BILL, due to the fact that there is a conflict between what is asserted in the second conjunct and the clear intuition that 'Mary even called BILL' presupposes that 'She called someone else'. To illustrate the existence of this presupposition in the semantics of *even*, note that the same oddity is observed if the English additive particle *also* is used in this sentence, as shown in (2.5).

(2.4)   # Mary *even* called BILL, but she didn't call anyone else.
(2.5)   # Mary *also* called BILL, but she didn't call anyone else.

This sentence, too, is contradictory since the additive presupposition of *also* is in conflict with the asserted content.

Although *even* seems to always carry an additive presupposition, it has been noted that the additive presupposition can be absent in certain cases (von Stechow 1991, Krifka

1991, among others). Specifically, the additive component seems to be absent if the invoked set of alternatives involves mutually exclusive propositions. Von Stechow (1991) and Krifka (1991) note that there is no additive presupposition in examples of the kind in (2.6) which involve *only* (which triggers exclusivity) in addition to *even*. The idea in von Stechow's argument is that when *even* and *only* associate with the same focused item, in this case 'Sue', then the additive presupposition of *even* would be in conflict with the assertion which due to the exclusive meaning of *only* states that 'Bill did not dance with anyone else'.

(2.6)   Bill *even* danced *only* with SUE.   (von Stechow 1991)

C= {that Bill danced only with Sue, that Bill danced only with Mary, Bill danced only with Pat}

Rullmann (1997, inspired by Horn 1972) discusses the problem that scales with mutually exclusive alternatives create for the existence of an additive component in the meaning of *even*. In (2.7), the additive presupposition, namely that at least one other proposition in the alternative set must be true, would give rise to the contradictory implication that 'Claire can have more than one academic rank at the same time'.

(2.7)   A: Is Claire an ASSISTANT professor?

B: No, she's *even* an ASSOCIATE professor.

C= {Claire is an assistant professor, Claire is an associate professor, Claire is a full professor}

The following example (with slight modification from Crnič 2011) also makes the same point.

(2.8)   A: Did Mary win bronze?

   B: No, she *even* won the SILVER medal.

   C= {she won the silver medal, she won the gold medal, she won the bronze medal}

The additive presupposition, again, would be incompatible with our knowledge- the assumption that one can only win a single medal in a single race.

In sum, although *even* seems to encode an additive presupposition in its meaning, scales with inconsistent alternative propositions call the existence of such a presupposition into question. Below, I will review existing theories which try to account for the absence of the additive presupposition[4].

2.2.3. Theories of additivity in the meaning of *even*

In this section, I first present two analyses (Rullmann 1997, Crnič 2011) that make an effort at explaining the occasional absence of the additive presupposition in the meaning of *even*. Since it appears to me that the second theory is a semantic implementation of the first, as I will discuss later, I will consider these theories jointly. Further, I present evidence that shows that these theories face problems in accounting for some English data. Finally, I will overview the analysis of *even* which I adopt in this study proposed by Wagner (2013, 2015). This analysis best captures the observations about English *even*.

2.2.3.1. The Rullmann- Crnič approach to the semantics of *even*

In this section, I will review two theories that have tried to account for the absence of the additive presupposition when *even* invokes a scale with mutually exclusive alternatives.

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[4] I am very grateful to Bernhard Schwartz and Luis Alonso-Ovalle for their insightful remarks and thorough discussions on the semantics of *even*.

First, I will present the more recent account by Crnič (2011), where he adopts the view that Rullmann (1997) might have had in mind, and then I will proceed to Rullmann (1997) and discuss an issue that his theory leaves unresolved.

2.2.3.1.1. Crnič (2011)

Crnič (2011)[5]puts forth a universal analysis of the additive presupposition of *even* and proposes the following definedness condition for the additive presupposition.

(2.9) $|| \text{EVEN}||^{g;c}(C, p, w)$ is defined only if $\forall q \in C [((p \lhd c\ q) \land (p \cap q \neq \emptyset)) \rightarrow q(w) = 1]$.

   If defined, $|| \text{EVEN}||^{g;c}(C, p, w) = 1$ iff $p(w) = 1$

In his account, the restriction of the universal additive presupposition is limited only to alternative propositions which are more likely than the propositional argument of *even* (first conjunct in the antecedent of the conditional above) and consistent with it (second conjunct in the antecedent of the conditional above). To illustrate how the additive presupposition is derived in Crnič's account, consider the example in (3), repeated below in (2.10).

(2.10) Mary *even* called BILL.

Even in this sentence triggers the additive presupposition that Mary called other individuals who were more likely than Bill for her to have called; C= {Mary called John,

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[5]Crnič proposes the decompositional view that *even* spells out two components: a scalar component, EVEN, which bears the scalar presupposition, and an additive piece, ADD, which is the bearer of the additive presupposition. Similarly, the present thesis will view these components as semantic features responsible for the presuppositions of *even*, *hatta*, and *ham* in English and Persian.

Mary called Sue, Mary called Jane, etc.}. These alternative propositions are compatible with the asserted content of the sentence.

As for alternative sets with mutually exclusive propositions, Crnič's account would predict that no alternative would satisfy the restrictor of the universal in (2.9) as the alternatives are inconsistent and the compatibility requirement cannot be satisfied; the second conjunct in the antecedent of the conditional in (2.9) is always false in such cases which makes the antecedent false. This renders the whole conditional logically true. Therefore, the additive presupposition is vacuously satisfied in Crnič's account. To illustrate this, consider the following example, again.

(2.11) A: Is Claire an ASSISTANT professor?

B: No, she's *even* an ASSOCIATE professor.

In this example, since the assertion 'Claire is an associate professor' is inconsistent with the alternative propositions in C= {Claire is a full professor', 'Claire is an assistant professor'}, the universal quantification in (2.12) runs vacuously and the sentence is felicitous since no additive presupposition is derived.

(2.12) a. Claire is *even* an ASSOCIATE professor

b. [EVEN C] [ADD C] [Claire is an ASSOCIATE professor]

c. [(12a)]$^{g;c}$(w) is defined only if $\forall q \in$ {that Claire is an x professor | x is assistant, associate, full}: ((that Claire is an associate professor $\lhd c$ q) $\land$ (that Claire is an associate professor $\cap$ q $\neq \emptyset$)) $\rightarrow$ q(w) = 1

The semantics that Crnič's proposes for the additive presupposition makes reference to the notion of inconsistency between alternative propositions, which he attributes to an earlier account put forth by Rullmann (1997), which will be described below.

2.2.3.1.2. Rullmann (1997)

Rullmann (1997) derives the additive presupposition on pragmatic grounds and proposes an account where the additive presupposition does not have an independent status and is an inference parasitic on the scalar component of *even*. According to his proposal, the use of *even* is only licensed if the speaker intends the hearer to draw a scalar inference. The additive presupposition would then be derived as an inference that the speaker allows the hearer to draw on the basis of the assertion and the scalar inference, as he notes:

"...the fact that the speaker uses *even* [in (2.2)] presupposes that the asserted proposition [that Mary invited Bill] is the least likely of the alternative propositions, but also justifies the hearer in drawing the conclusion that the other (more likely) propositions in the set of alternatives are also true. In this way what used to be called the existential presupposition can be derived from the combination of the assertion and the scalar presupposition..."

Therefore, once the speaker asserts a sentence like 'Mary *even* called BILL', the presupposition that the asserted proposition is the least likely proposition among its alternatives is triggered and the hearer would then be allowed to infer that the other more likely propositions in the set of alternatives are also true. In other words, in Rullmann's theory, the additive implication, which has to do with the truth of the other alternatives, is

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derived by default from assuming the following as premises: the truth of the prejacent of *even* and a scalar presupposition which has to do with the likelihood ordering between the alternative propositions.

Rullmann's theory would, in principle, predict the absence of the additive presupposition in the case of mutually exclusive alternatives, where the additive presupposition is in conflict with the assertion. Recall the example in (11), in which Claire's being a full or an assistant professor is inconsistent with her being an associate professor. In this case, no additive presupposition would arise, according to Rullmann's recipe, as the scalar inference is not satisfiable in the first place under normal circumstances. This will be discussed further below.

The account put forward by Rullmann is highly reliant on the scalar inference as a premise which would justify the hearer to infer the additive presupposition. And the scalar inference is defined on the basis of the likelihood relationship between the alternatives. Nevertheless, the account is somewhat obscure as it does not offer an entirely clear solution to the question of what it is at the heart of mutually exclusive alternative scales which blocks the existence of an additive presupposition. To explain the lack of an additive presupposition for the example in (2.12), for instance, he argues that:

"Here the alternatives (assistant, associate, and full professor) are mutually exclusive, and hence there is no entailment relation between them, not even a pragmatic one. As a result, neither "Claire is an associate professor" nor "Claire is a full professor" can be inferred from the asserted proposition "Claire is an associate professor" in combination with the scalar presupposition of the sentence." (Rullmann 1997, p. 61)

2.2.3.1.3. Possible interpretations and problems with the Rullmann-Crnič approach

I believe that the above account can potentially be interpreted in two different ways which I will discuss and eventually cast doubt on in the rest of this section.

2.2.3.1.3.1. Rullmann: inconsistency-based view

The first possible interpretation of Rullmann's account is that the additive presupposition is absent if its truth yields a contradiction with the assertion. In other words, no additive presupposition arises in the case of scales which involve mutually inconsistent alternatives since it would always contradict the asserted content. This is the line of thought which has been adopted and implemented in Crnič (2011), as discussed earlier.

2.2.3.1.3.2. Rullmann: likelihood-based view

The second interpretation of Rullmann's account has to do with the absence of a likelihood relationship between the alternative propositions to license the scalar inference, which is at the core of his proposal. If the likelihood between alternatives is such that the scalar inference is not licensed, for instance in mutually exclusive alternative scales, his account would predict the absence of the additive component. This latter interpretation, however, raises the following question for his theory: If the presence of a likelihood relationship to satisfy the scalar inference is all there is to the licensing of the additive presupposition, should examples such as the one in (2.13) be deviant where the alternatives are mutually inconsistent but a likelihood ordering is made available between them? Put differently, are we always pushed into an additive presupposition provided likelihood is there?

(2.13) Context: Students were given a very difficult test where it was almost impossible to get an A (getting an A is far less likely than getting a B, C, etc).

A: Harold did a great job on the test!

B: How did he do? Did he get a B?

A: No, he *even* got an A!

What the well-formedness of this example indicates is that even if likelihood is established in the right way for the scalar presupposition to be satisfied in mutually exclusive alternative scales, we are not forced to get an additive presupposition. Therefore, likelihood might not be the correct notion to make reference to for the unavailability of the additive presupposition in these cases. In addition, reconsidering the example in (2.12), if we alter our contextual assumptions such that for Claire being an associate professor is the least likely academic rank, for instance if she is a very young professor and is more likely to be an assistant professor but she has tons of publications and is an associate professor, do we get an additive presupposition? The answer is no, which is not quite what Rullmann's theory predicts.

The conclusion so far would then seem to be that it is more plausible to assume the first possible interpretation of Rullmann's theory which attributes the absence of the additive presupposition to the incompatibility of the alternatives, which is the position taken by Crnič (2011), hence the Rullmann-Crnič approach, as I assume. In the next section, however, I will argue by looking at a new set of data that even this theory is not entirely on the right track.

2.2.3.1.3.3. Problems with the Rullmann-Crnič approach

As discussed above, the Rullmann-Crnič approach makes reference to the incompatibility of alternatives as the reason for the absence of the additive presupposition. In this section, I will overview some issues with this approach and discuss an alternative proposal that seems promising in capturing the observations about English *even*.

The Rullmann-Crnič approach to the semantics of *even* predicts felicity of sentences whose alternative propositions involve mutually exclusive alternatives. An example of this kind, as we have already seen, is the following.

(2.14) A: Is Claire an ASSISTANT professor?

B: No, she's *even* an ASSOCIATE professor.

B's utterance is felicitous because no additivity is derived in this case as the alternative propositions to the prejacent imply its falsity.

However, consider the following counterexamples to this proposal.

(2.15) # *Even* THIS LITTLE BOY is the tallest one in the class.

(2.16) # *Even* MY 5-YEAR OLD lifted the heaviest rock[6].

These examples involve mutually inconsistent alternatives since the semantics of the superlatives used in them ('the tallest', 'the heaviest rock') implies 'uniqueness' suggesting that no other alternatives could be true. As such, these examples should be felicitous, according to Rullmann-Crnič approach, just like B's utterance in (2.14), where the theory

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[6] The assumption in this example is that there is only one lifting per person.

predicts that an additive presupposition cannot be licensed. A question that can be asked is if the inconsistency of alternatives blocks an additive presupposition, and if additivity cannot be derived in (2.15) and (2.16), then what is it that makes examples of this kind odd? There is a clear intuition that there is an additive interpretation in (2.15) and (2.16) which makes the sentences odd as it clashes with the uniqueness presupposition of the superlatives used. (2.15) and (2.16) should be fine sentences, otherwise, if the Rullmann-Crnič hypothesis is on the right track. This, I believe, challenges the proposal put forth in Rullmann (1997) and Crnič (2011).

Relatedly, Wagner (2013, 2015) points out that the Rullmann-Crnič approach runs into an empirical problem in explaining the data below:

(2.17) Context: I heard the results of this year's marathon were surprising. Is it true that this time it wasn't a Kenyan who won the gold medal?

a. Oh yes. # *Even* a CANADIAN won it

b. Oh yes. A CANADIAN *even* won it.

(2.18) Context: John was a favorite in the marathon. Did he win a medal?

a. Oh yes. # John won *even* the GOLD medal.[7]

b. Oh yes. John *even* won the GOLD medal.

(2.17a) and (2.18a) are odd sentences but their paraphrases in (2.17b) and (2.18b) are not. The sentences in (2.17b) and (2.18b) involve alternative sets with mutually exclusive alternatives, C={A Brazilian won it, A Russian, won it, etc} for (2.17a) and C={John won the silver medal, John won the bronze medal, etc.}, and are felicitous sentences as the Rullmann-

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[7] Note that this word order, with *even* attaching to the object NP, is independently reported to be unnatural to some speakers.

Crnič would predict because additivity is blocked. The question then is why the (a) sentences are weird.

Wagner argues that unless there are multiple winners in (2.17a) or multiple medals in (2.18a), these sentences are odd precisely because of an additive presupposition. But this presupposition is, again, not derived according to the Rullmann-Crnič approach as the alternative sets here, C={A Brazilian won it, A Russian, won it, etc} for (2.17a) and C={John won the silver medal, John won the bronze medal, etc.}, do involve mutually exclusive propositions. Wagner further proposes an analysis which explains the facts about the semantics of *even* in English. I will overview his proposal in the next section.

2.2.3.2. Wagner (2013, 2015): A syntactic account of the semantics of *even*

Wagner (2013) believes that whether or not *even* triggers an additive presupposition depends on its syntactic position in the sentence. Consider the following paradigm from Wagner (2013):

(2.19) A: Is it really true that someone from North America won the Marathon?

　　　B:　　a. #*Even* a CANADIAN (won it)!

　　　　　　b. A CANADIAN *even* won it!

　　　　　　c. A CANADIAN won it *even*!

　　　　　　d. ?A CANADIAN *even*!

In his view, when *even* precedes its associate subject argument, an additive presupposition is necessarily present in its meaning (a in 2.19). In other words, when *even* prenominally attaches to an NP constituent (NP-*even*), presence of an additive presupposition in ensured.

When *even* is in VP position, however, and backwards associates[8] with a preceding subject (postnominal *even;* b and d in 2.19), or is sentence-final[9] (c in 2.19), the additive presupposition is absent. In general, when *even* attaches to the VP (VP-*even*: whether it backwards associates with the subject-postnominal *even*- or associates with the VP or an internal VP argument) or the sentence (sentence-final *even*), the additive presupposition is not present in the meaning of *even*. Of course, there is nothing that blocks VP-*even* or sentence-final *even* from appearing in an additive context. *Even* in these positions just does not have an additive component encoded in its meaning but its use is very well compatible with additive contexts.

Wagner (2013, 2015) presents an argument supporting this syntactic generalization from association with universal operators like *every*. He first proposes the semantic constraint in (2.21), inspired from Hurford's generalization given in (2.20).

(2.20) Hurford's Constraint: (Wagner 2013)
    The joining of two sentences by *or* is unacceptable if one sentence entails the other; otherwise the use of *or* is acceptable.

(2.21) Non-Redundancy (NR)   (Wagner 2013)
    The alternative(s) an additive operator is anaphoric to cannot entail the prejacent or be entailed by it.

To illustrate the NR constraint, Wagner (2015) presents the examples below which demonstrate that additivity is not compatible with the existence of entailment relations[10] between alternative propositions.

(2.22) a. Everyone solved the problem.   # Someone *also* solved the problem.

    b. Someone solved the problem.   # Everyone *also* solved the problem.

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[8] See Erlewine (2014) for discussion of backwards association.
[9] Wagner does not discuss the syntactic category of the constituent that sentence-final *even* associates with. This does not have a bearing on the analysis here.
[10] See Cohen, S. (2009) for more on additive operators and entailment.

In (2.22), the use of the additive operator *also* renders the entailing or entailed proposition that contains it infelicitous.

Wagner further shows that the NR is operative in examples which involve *even* associating with universal operators. He argues that whether or not *even* encodes additivity in its meaning should have consequences for its association with universal operators like *everything*, *everyone*, *etc*. Given that the alternative propositions to sentences that contain *every* would be entailed by them (e.g. sentences with *some* in them), Wagner believes, following the NR, that if the meaning of *even* involves an additive component, its association with universal operators should yield infelicity. If *even* does not encode additivity, however, such sentences should in principle be felicitous. The following example illustrates this point (slightly modified)[11].

(2.23) A: Did anyone solve the problem?

   B: #Yes. *Even* EVERYONE (did).   (Wagner 2015)

   B': Yes, EVERYONE *even* (did).

The contrast in B versus B's responses above shows that *even* cannot associate with a universal operator specifically when it syntactically precedes it. When it follows the associate, it seems to be compatible with the use of a universal associate. According to Wagner, the infelicity of the utterance by speaker B is attributable to the presence of an additive component in the semantics of prenominal *even*. Postnominal *even*, however, does

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[11] The contrast in the semantic contribution between prenominal and postnominal *even* in English is reported to be more naturally perceived in fragment structures (rather than full sentences) which involve ellipsis (Merchant 2001, 2004). An example, with object *even*, is given below.

(1)   A: Did she read any of the books?
     B: # *Even* all of them.   (Wagner 2015)
     B': All of them, *even*.

not have this component in its meaning and its use is therefore compatible with a universal operator like *everyone*, hence felicity of the utterance by B'. Note that in fragment constructions such as the one in (2.23), one cannot entirely be sure that prenominal *even* is actually attaching to the DP because adverbs are also fine in prenominal position in fragments, e.g. '*Probably* everyone' which suggests that VP-attachment is also possible. Alternatively, one could understand Wagner's syntactic generalization in terms of forwards vs. backwards association of *even* with its associate. As such, *even* would be additive if it forwards-associates with an NP and has a non-additive interpretation if the association is backwards. Since this issue requires further syntactic investigation, I leave it aside for now and continue to use the pre vs. postnominal distinction in the present thesis[12].

Wagner also presents evidence from association with *nothing* which supports the above generalization. While postnominal *even* is compatible with association with *nothing* (2.24b), prenominal *even* (2.24a), which encodes additivity, is not.

(2.24) Context: What did we find out? Not much.

a. # *Even* NOTHING.
b. NOTHING, *even*.

In summary, Wagner presents a syntactic generalization about *even* that explains a wide array of empirical data in English. He proposes that in prenominal position, *even* always carries an additive presupposition. Therefore, the following sentences find an explanation under Wagner's proposal, whereas earlier approaches cannot account for them.

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[12] Thanks to Lisa Travis for pointing this out and to Michael Wagner for suggesting the alternative possibility.

(2.25) *Superlatives*

      # *Even* MY 5-YEAR OLD lifted the heaviest rock[13].

      MY 5-YEAR OLD *even* lifted the heaviest rock.

      MY 5-YEAR OLD lifted the heaviest rock, *even*.

(2.26) *Uniqueness-implying predicates*

      # Oh, yes. *Even* A CANADIAN won it.

      Oh, yes. A CANADIAN *even* won it.

      Oh, yes. A CANADIAN won it, *even*.

(2.27) *Universal operators*

      # *Even* EVERYONE solved the problem.

      EVERYONE *even* solved the problem.

      EVERYONE solved the problem, *even*.

The odd sentences in (2.25-27) involve prenominal *even* which introduces an additive presupposition. The additive presupposition is in conflict with the uniqueness presupposition of the superlatives in (2.25), or the exclusivity of the predicate 'win a gold medal (in a specific tournament)' in (2.26), or the semantic constraint of NR in (2.27). The observed weirdness goes away when *even* is not additive; in other words, postnominal or sentence-final *even*.

      Wagner's proposal posits that prenominal *even* is necessarily additive. Postnominal *even*, however, does not linguistically encode additivity. This is also true of adverbial *even*

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[13] Note again that the assumption here is that there is only one lifting per person.

when *even* attaches to a VP[14] and associates with a VP internal argument; it does not carry an additive presupposition. Consider the following data which involve adverbial *even*[15].

(2.28) a. John *even* won the GOLD MEDAL.   (Wagner 2015)
      b. Harold *even* got AN A.
      c. Claire *even* married an ASSOCIATE PROFESSOR.

These examples involve adverbial *even* used with predicates that imply uniqueness. Had *even* been additive in these cases, the sentences should have been odd. Felicity of these sentences confirms the absence of an additive presupposition in the semantics of VP-*even*.

To sum up this section, I adopt the following assumptions about the semantics of *even* in English based on Wagner's syntactic generalization about this particle.

i.   *Even* in English always triggers a scalar presupposition: The proposition it takes is the least likely alternative in the pertinent alternative set. I adapt the following characterization in (2.29), following Crnič (2011)[16], among others, for this presupposition.

(2.29) $[[\text{SCAL}]]^{g,c}(C, p, w)$ is defined only if $\forall q \in C [p \neq q \rightarrow p \lhd_c q]$[17].
      If defined, $[[\text{SCAL}]]^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

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[14] This generalization is also true of sentence-final *even*.
(1)   John won the GOLD MEDAL, *even*.
(2)   Claire married AN ASSOCIATE PROFESSOR, *even*.
Wagner does not discuss the syntactic category of the constituent that sentence-final *even* associates with. This does not have a bearing on the analysis here.
[15] Wagner notes that the following example also involves an adverbial *even*. The copula *is* hops over *even* just like it would over other adverbs like *probably*.
(3)   a. Claire is *even* an ASSOCIATE PROFESSOR.
        b. Claire is *probably* an ASSOCIATE PROFESSOR.
[16] Crnič uses $[[\text{EVEN}]]$ in his characterization.
[17] Crnič uses an existential in this characterization. The quantificational force of the operator is not relevant for the purposes of this study. Readers may refer to Crnič (2011) for more on this. I, however, follow Karttunen and Peters (1979) and many others in assuming a universal quantification here.

I refer to this semantic component of *even* as SCAL and use the following feature specification in this study to represent the sclarity of *even*: [SCAL]

ii. *Even* in English may have an additive presupposition in its semantics depending on its syntactic distribution.

iii. If *even* associates with a following NP (NP-*even*), it always carries the additive presupposition that at least one other alternative in the pertinent alternative set is true. Therefore, prenominal *even* encodes both a scalar and an additive component in its meaning. The feature specification I assume for prenominal *even* is [SCAL,ADD]. I will follow Crnič's (2011) decompositional view where he assumes two components in the lexical entry for *even*. I assume SCAL for the scalar component and ADD for the additive. As such, prenominal *even* spells out the following two components in (2.30) and (2.31) in English.

(2.30) $[[\text{SCAL}]]^{g,c}(C, p, w)$ is defined only if $\forall q \in C [p \neq q \rightarrow p \vartriangleleft c\ q]$[18].
If defined, $[[\text{even}]]^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

(2.31) $|| \text{ADD}||^{g,c}(C, p, w)$ is defined only if $\exists q \in C [p \neq q \wedge q(w) = 1]$.
If defined, $|| \text{ADD}||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

iv. If *even* attaches to a VP (postnominal[19], adverbial[20], or sentence-final *even*), it only spells out the scalar component. I assume the following characterization to represent the denotation of non-prenominal *even*: [SCAL].

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[18] Crnič uses an existential in this characterization. The quantificational force of the operator is not relevant for the purposes of this study. Readers may refer to Crnič (2011) for more on this. I, however, follow Karttunen and Peters (1979) and many others in assuming a universal quantification here.

[19] This study parimarily investigates prenominal versus postnominal uses of *even*. Therefore non-additive *even*, in this research would make reference to postnominal *even*.

(2.32) [[SCAL]]^{g,c}(C, p, w) is defined only if $\forall q \in C$ [p ≠ q → p ⊲c q]²¹.

If defined, [[even]]g,c(C, p, w) = 1 iff p(w) = 1

The semantics assumed here would in principle not block non-additive *even* from appearing in additive contexts since its use is not incompatible with an additive context. Plausibly, Wagner argues, that in contexts where additivity is fulfilled, the principle of Maximize Presupposition²² (Heim 1991) forces an additive interpretation of *even* as one would have to maximize the strength of the presuppositions encoded in an utterance. So, *even* in example (2.33) from Wagner (2013) can very well have an additive interpretation if this presupposition is satisfied in the context.

(2.33) Mary *even* invited JOHN to the party.

Relatedly, in (2.34), *even* in adverbial position, is ambiguous between an additive and non-additive meaning. Consider the following exchange in the given context.

(2.34) Context: Some people are playing a 'high card wins!' game of cards²³, where the person with a highest card value wins, and they have to hold their cards in their hands in such a way that nobody would be able to see how many cards they have and they may have any number of cards, including only one. A and B are partners in this game.

A: Do you have a six?

B: I *even* have a TEN.

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[20] Lets assume that what is meant by VP/adverbial *even* is association either with the VP or a VP internal argument. Backwards association of *even* in VP position is referred to as postnominal *even*.

[21] Crnič uses an existential in this characterization. The quantificational force of the operator is not relevant for the purposes of this study. Readers may refer to Crnič (2011) for more on this. I, however, follow Karttunen and Peters (1979) and many others in assuming a universal quantification here.

[22] This principle forces the speakers to opt for an expression with stronger semantic presuppositions if these presuppositions are satisfied by the context.

[23] The relevant scale in this example is probably noteworthiness (depending on card value). Therefore, the prejacent of *even* has to be the most noteworthy (least likely) proposition.

In this exchange, A is not forced to infer that B has more than one card; B can very well have only one card in this scenario[24]. In other words, *even* is ambiguous between an additive and a non-additive interpretation. In light of Wagner's proposal, VP-*even* does not come with an additive presupposition. But if context satisfies additivity, for instance if players in this game would for some reason lose if they end up having one card in their hand, such that each player would have more than one card at a given time, then an additive interpretation gets involved.

2.2.4. Pilot study: Syntactic position of *even* and its semantic contribution

In this section, I will report the results of an experiment on the interface between the syntax of *even* and its semantic contribution. Specifically, the goal of the experiment was to see if there is a difference for native speakers between prenominal versus postnominal *even* in terms of the presence or absence of an additive component in its semantic specification, as assumed in Wagner's analysis.

2.2.4.1. Participants

Eleven adult monolingual native speakers of English participated in this experiment (N=11). They were asked to do an online felicity judgment experiment online (on SurveyGizmo) at a time of their choice. They were compensated for their cooperation at the completion of the experiment.

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[24] Note: Here, the alternative propositions C= {I have a five, I have a nine, etc.} are consistent. In other words, the player can have a five, in addition to a nine, etc. So an additive presupposition is always derived according to the Rullmann-Crnič approach.

2.2.4.2. Methodology and procedure

The task consisted of 72 test items (see appendix A). Each test item (an example is shown in figure 2.1) consisted of a short story followed by a fragment additional remark. The choice of fragment remarks as opposed to full sentences (non-fragment, hence-forth) was due to an overall intuition suggesting that that presence or absence of an additive presupposition is perceived more naturally in these constructions. This experiment tested *even* attaching to NPs in object position only. Nine different stories were included in which the story contexts were built such that the prejacent of *even* would always be the least likely alternative in the set of pertinent propositions. This ensured the felicity of the use of the particle *even* through the experiment. The participants were instructed to read the short story first and subsequently rate the naturalness of the additional remark on a scale from 1(completely unnatural) to 7 (completely natural).

Figure (2.1). Test item from the pilot experiment on *even*
Context: scalar additive

There were eight conditions in the design of the experiment: three two-level factors. The three factors were *Syntax*, *Context*, and *presenceToo*. For *Syntax*, *prenominal* versus *postnominal* position of *even* was manipulated in the additional remark. The given story *context*s were either *additive*, licensing the additive presupposition for the use of *even*, such as the one in figure (2.1), or *non-additive* which would presumably block an additive presupposition, such as the one in figure (2.2). Additionally, the presence of the additive operator *too* (*presenceToo*) was manipulated in the additional remark to see if this operator is favored in the syntax when additivity is satisfied in the context. This manipulation was considered because in Persian, the second language of interest in the present dissertation, a lexical item triggering the additive presupposition gets inserted in the syntax when context satisfies additivity. Specifically, the additive operator *ham* which bears [ADD] is used in combination with the scalar item *hatta* in contexts that satisfy scalarity and additivity[25].

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[25] More details on Persian will be discussed in section 2.3. Although not directly related to the syntax-semantics of *even* in English, I decided to keep the conditions equivalent across both languages for the purposes of second language acquisition analysis (as will be seen in chapter 4) and used the variable *presenceToo* with the two levels *Too* for conditions where the additive operator is present in combination with *even* and *hatta* and *NoToo* where the additive operator is absent and *even* and *hatta* were used alone.

Figure (2.2). Test item from the pilot experiment on *even*
Context: scalar non-additive

2.2.4.3. Results and discussion

The results of the experiment are plotted in figure (2.3). The left column represents the felicity rating for *even* in *prenominal* syntactic position and the right columns shows the resuts for *postnominal* placement of *even*. The top row shows the results for the *NoToo* condition where *even* was used alone and the bottom row represents the results for the *Too* condition where the additive operator *too* was used in addition to *even*. Further, the results for *additive* contexts are shown in the box plots to the left of *non-additive* ones.

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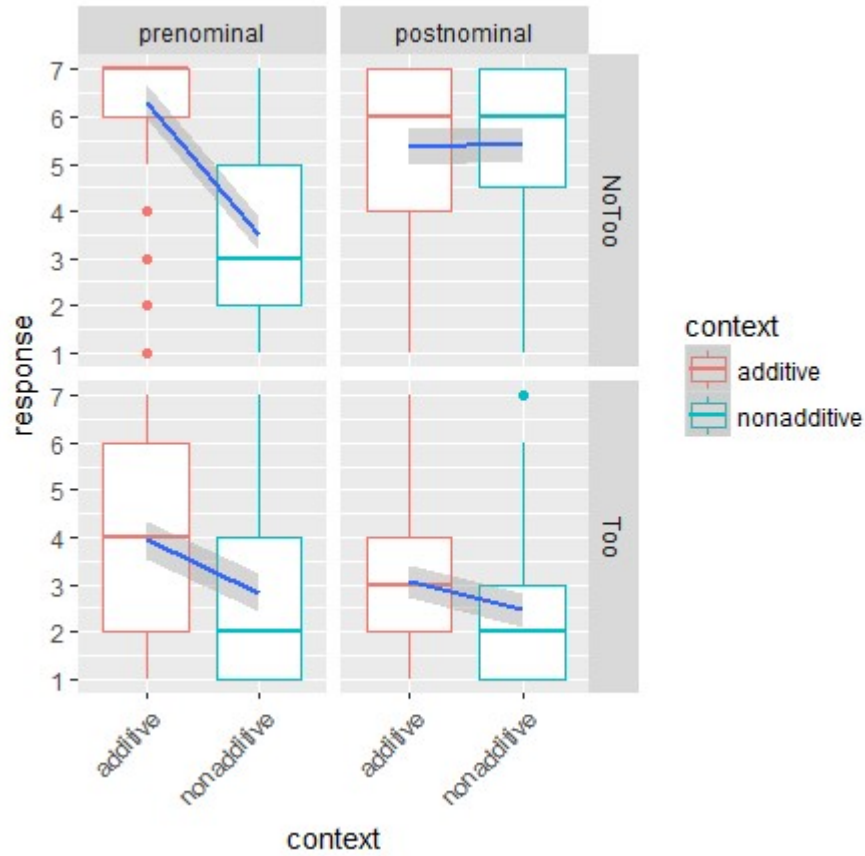
Figure (2.3). Felicity rating for the NSs of English; by *type, syntax, context, presenceToo*

As the figure above illustrates, there is a sharp contrast between *prenominal* and *postnominal* positions of *even* in English in terms of the additivity or non-additivity of the contexts in which they appear. Statistical results from a linear mixed-effects regression model are summarized in table (2.1). The model included fixed effects for *syntax*, *context*, and *presenceToo* as well as two-way interactions.

Table (2.1). Summary of effects of *syntax*, *context*, and *presenceToo*

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	0.06194	0.11965	767.00000	0.518	0.6048	
context	-1.11276	0.11965	767.00000	-9.300	< 2e-16	***
presenceToo	-2.07810	0.11965	767.00000	-17.368	< 2e-16	***
syntax:context	-1.68156	0.23930	767.00000	-7.027	4.66e-12	***
context:presenceToo	0.50026	0.23930	767.00000	2.091	0.0369	*

The results do not indicate an overall main effect of *syntax*. There is, however, a main effect of *context*. The use of *even* is significantly preferred in additive contexts over *non-additive* contexts. This is compatible with the overall intuition suggesting that speakers prefer to use *even* if the context is *additive*. In other words, the use of *even* is most natural if context satisfies additivity. The results further indicate that this preference significantly interacts with the syntactic position of this particle: in *additive* contexts, *prenominal* is the preferred syntactic position for *even* and *postnominal even* is the preferred particle in *non-additive* contexts. Another finding from this study suggests that the difference between *additive* and *non-additive* uses of *even* (the additivity effect, henceforth) is significantly larger if *even* is in *prenominal* syntactic position. This result confirms the predictions of the syntactic generalization about the semantics of *even* (Wagner 2013, 2015): *even* in *prenominal* position is necessarily additive. It encodes an additive component which makes its use inconsistent with non-additive contexts. It is further confirmed in this experiment that *even* in *postnominal* position does not semantically 'encode' an additive presupposition. It is the preferred particle in *non-additive* contexts suggesting that it does not bear an additive component to make it inconsistent with such contexts. Further, *postnominal even* is compatible with *additive* contexts which is not surprising as there is nothing that would block it from being used in such contexts.

The results also demonstrate a significant dispreference for the use of the additive operator *too* in combination with *even* in English, main effect for *presenceToo*. When used, however, speakers prefer this operator in *additive* contexts, hence significant interaction between *presenceToo* and *context*. The high rejection rate for the *Too* condition confirms

the intuition that in English, the use of *too* is not natural (is perhaps superfluous) in combination with *even*.

Finally, it should be pointed out that, since in this experiment the target stimuli were fragment constructions and *even* was placed before or after NPs in object position, the results for *postnominal even* (which was shown to be non-additive) could be viewed as compatible with an analysis in which utterance-final (rather than postnominal) *even* is non-additive (as suggested in Kim & Jahnke 2011). This is not a distinction that the present research focuses on and could be further explored, for instance, by investigating whether the *prenominal* versus *postnominal* distinction observed here holds in cases where *even* is placed before and after NPs in subject position, rather than in object position which allows both postnominal and utterance/sentence-final interpretations.

2.2.5. Summary

The goal of this section was to present the semantics assumed in the present study for English *even*. I reviewed the relevant literature on *even* and discussed the empirical problems that some face in accounting for English data. Finally, I concluded that Wagner's syntactic theory of *even* seems most promising in explaining a wider array of observations about *even* in English, confirmed by experimental results from an online study on the syntax-semantics of *even*.

In conclusion, the present dissertation will build on the following working assumptions about the syntax-semantics of *even*, based on Wagner (2013, 2015) and the feature analysis of this particle adopted from Crnič (2011).

(1)   *Even* is lexically specified for scalarity. It always introduces a scalar presupposition.

(2)   *Even* can syntactically attach to an NP (prenominal *even*), a VP (postnominal and VP-*even*), or an entire proposition (sentence-final *even*).

(3)   If *even* precedes an NP (prenominal *even*), it additionally triggers an additive presupposition. I will use [SCAL,ADD] for such occurrences of *even* and, for ease of application in the present study, term *even* in such contexts additive *even*.

(4)   If *even* in VP position associates with a preceding NP (backwards association, postnominal *even*), a following VP or VP-internal argument, or an entire proposition (sentence-final *even*), it is not lexically specified for additivity. Feature-wise, I will use [SCAL] for *even* in these syntactic positions. Let us term this, for ease of application in the present study, non-additive *even*.

(5)   Non-additive *even* can take an additive interpretation if an additive presupposition is fulfilled in context. This is predicted by Maximize Presupposition; if context satisfies scalarity and additivity, speakers would prefer to *assume* [SCAL,ADD] for *even* as one has to use the utterance with stronger presuppositional content but this does not mean that this particle semantically encodes [ADD] because it is (at least equally) compatible with contexts that do not satisfy additivity. It should not be consistent with non-additive contexts, had it encoded [ADD] in its semantics.

In the next section, I will use the feature-based implementation of Crnič's semantics for *even* in order to present an account of how the relevant presuppositions are realized in

Persian. I will do so by investigating the semantics of the following focus-sensitive presupposition triggers: *hatta*, *ham*, and *hatta-ham* combinations in this language.

2.3. Persian: *hatta, ham, hatta-ham*

2.3.1. Introduction

The goal of this section is to provide an analysis of the operators in Persian which trigger the scalar and additive presuppositions associated with *even* in English.

In the previous section, I discussed the existing theories of *even* in English and concluded by adopting Wagner's (2013, 2015) syntactic theory of *even*. I further assumed Crnič's (2011) decompositional view of the semantics of *even* (2.35 and 2.36 below) and implemented his assumptions in my research by introducing the feature representations given in (2.37) and (2.38) for the semantic components of *even*:

(2.35) $|| \text{SCAL} ||^{g,c}(C, p, w)$ is defined only if $\forall q \in C \ [p \neq q \rightarrow p \lhd_c q]$.
If defined, $||\text{SCAL}||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

(2.36) $|| \text{ADD}||^{g,c}(C, p, w)$ is defined only if $\exists q \in C \ [p \neq q \land q(w) = 1]$.
If defined, $||\text{ADD}||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

Wagner's syntactic view of the meaning of *even* suggests that in prenominal position, both semantic components are spelled out for *even*. In other words, *even* contributes both a scalar and an additive presupposition. The feature representation I am assuming in this study for *even* in prenominal position is as follows:

(2.37) *Prenominal even*:   [SCAL,ADD]

Wagner further proposes that *even* in postnominal position, where it backwards focus associates with an NP, spells out the scalar presupposition but does not necessarily spell out the additive component. Feature-wise, I assume the following representation for postnominal *even*.

(2.38) *Postnominal even*:   [SCAL]

In this section, I will present an analysis of how the scalar and additive presuppositions of *even* are realized in Persian. I will use the features [SCAL] and [ADD] and build on the decompositional analysis of the meaning of *even* (Crnič 2011).

     Even has always been translated into *hatta* in Persian. Likewise, learners of Persian learn that *hatta* is an equivalent of *even*. I propose, based on data presented in this section, that *even* and *hatta* are actually not exact semantic equivalents.

     First, I argue that Persian *hatta* does not spell out the same semantic features that *even* does in prenominal position. Recall that in this position, English *even* is [SCAL,ADD]. I will show that *hatta* only has the scalar component in its meaning; it is not specified for additivity, regardless of its syntactic position. As such, I assume the following feature set for prenominal and postnominal *hatta* in Persian:

(2.39) *hatta*:   [SCAL]

This representation, as shown before, is what I assume for English *even* in postnominal position.

Second, I propose that *ham* is an additive operator in Persian which does not carry a scalar meaning. The following feature representation will be assumed for *ham*.

(2.40) *ham*:   [ADD]

 Furthermore, I will show that the when these items form a string with an NP (*hatta*-NP-*ham*), both a scalar and an additive presupposition are triggered: scalarity is contributed by *hatta* and additivity by *ham;* in scalar additive contexts, Persian speakers use *ham* in addition to *hatta* in the following basic word order[26]:

(2.41) *hatta*-NP-*ham*:   [SCAL,ADD]

In other words, when additivity is satisfied in context, a separate lexical item *ham* which triggers additivity is used in addition to *hatta* in Persian. This combination, *hatta*-NP-*ham* gives rise to both a scalar (contributed by *hatta*) and an additive (contributed by *ham*) presuppositions, which in English, is triggered by *even* in prenominal position. This representation is the same feature specification as prenominal *even* in English.

The next section will present arguments in favor of the assumptions outlined above for *hatta*, *ham*, and *hatta-ham*.

2.3.2. Scalar and additive operators in Persian

2.3.2.1. *hatta* is a scalar operator

In this section, I will show that *hatta* is a scalar operator in Persian which does not lexically encode additivity. To do so, I will provide separate arguments for the presence of a scalar

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[26] Note that in this string, *hatta* can follow the associated NP as well: NP-*ham-hatta* in more colloquial speech.

component and absence of an additive component in the meaning of this item. I will first show that it is [SCAL] and then that it is not specified for additivity.

2.3.2.1.1. *hatta* is [SCAL]

As already seen, a scalar item triggers a scalar presupposition; namely, that the proposition it takes as prejacent is the least likely alternative in the alternative set. To show that *hatta* is [SCAL], consider the following context.

(2.42) Context: Lionel Messi is inarguably the best soccer player in the world. He's a forward player who scores most goals for his team. In yesterday's game, Phil James, who was trying out for the team, was given a chance to play, although no one expected him to score. But it turned out to be a rather easy game and many people scored for the team.

  A: *hatta* jeimz   gol   zad.

    SCAL James   goal hit

    'Even James scored a goal.'

  A':   #*hatta*   mesi gol   zad.

    SCAL   Messi goal hit

    #'Even Messi scored a goal.'

The context above makes the proposition that 'James scored a goal' an unlikely one since James was only trying out for his team and was not likely to score a goal. Therefore, the sentence in A is felicitous as *hatta* is taking a proposition that presumably is the least likely/most unexpected. In addition, the context ensures that the prejacent of *hatta* in A', the proposition that 'Messi scored a goal', is very likely; it is very likely for Messi to score a goal in any game. This context, therefore, does not satisfy scalarity, the scalar presupposition which would require the prejacent of *hatta* to be the least likely. I argue

that the use of *hatta* in this context yields infelicity because *hatta* has a scalar component in its meaning which requires the prejacent to be the least likely. This is in conflict with the given non-scalar context (the prejacent not being the least likely proposition), hence infelicity.

Similarly, consider the following examples in (2.43).

(2.43) Context: Chopsticks were first and mostly used by the Chinese. They were just very recently introduced in Iran. Today, using chopsticks has become very popular all around the world.

A:　　*hatta* irani-ha　　ba　　choob　　qaza　mixoran.

SCAL　Iranian-PL　　with　chopstick　　food　eat
'Even Iranians eat with chopsticks.'

A':　　#*hatta*　　　chini-ha　　ba　　choob　　qaza　mixoran.

SCAL　　　　Chinese-PL　　with　chopstick　　food　eat
'Even the Chinese eat with chopsticks.'

Here, Iranians are not expected to widely use chopsticks, since they were just introduced to them. The context makes the Chinese the most likely population to use chopsticks, however. The use of *hatta* in the first case is, therefore, felicitous since the prejacent satisfies scalarity and feels odd in the second case because it triggers a scalar presupposition which clashes with the non-scalarity of the context.

In summary, *hatta* has a scalar component in its meaning that prevents it from being used in contexts that do not satisfy the scalar presuppsotion, non-scalar contexts. I have not yet shown here that *hatta* is not specified for the additive component. This is discussed below.

2.3.2.1.2. *hatta* is not specified for additivity

If *hatta* had an additive component coded in its meaning, its use in non-additive environments would lead to infelicity; the additive presupposition would clash with the non-additivity of the context and therefore one would predict infelicity for the examples below. Consider the following examples where the use of *hatta* is licensed due to the scalarity of the contexts but the contexts do not satisfy additivity.

(2.44) Context: Claire is not a highly educated person and also never wanted to marry a highly educated person. But to everyone's surprise, she married someone who teaches at university.

    A: Did Claire marry an assistant professor?

    B: *hatta* ba   ye   ostadyar   ezdevaj   kard.

          SCAL with a   associate professor marriage   did

          'She married *even* an associate professor.'[27]

The example given above is perfectly natural in Persian and does not imply that Claire has married another person besides an associate professor. The conclusion I draw, then, is that *hatta* does not encode an additive presupposition and therefore should not be specified for additivity. It must be noted that in principle, there is nothing that would block *hatta* from appearing in additive contexts, like postnominal *even* in English; its use is perfectly compatible with additive contexts[28]. Note that the example above would be odd if a lexical item with an additive component is used:

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[27] In English, there seems to be a dispreference for attaching *even* to a VP-internal noun phrases. Therefore, sentences like this (and the example in 9) are in general disprefered compared to ones with adverbial *even*. My English consultants report that this sentence feels odd because it implies additivity, namely that Claire has married more than one person.

[28] As the experimental results show in chapter 4, speakers do in general prefer to use *hatta* in additive contexts. This is also true of *even* in English.

(2.45) B':   #ba   ye   ostadyar   *ham*   ezdevaj   kard.

             with   a   associate professor *too*   marriage   did

             'She married an associate professor, too.'

Likewise, consider the following example.

(2.46)   Context: Each person gets only one grade for a given exam. Students were given a very difficult test where it was almost impossible to get a 20 (getting a 20, the maximum grade, is far less likely than getting a 19, 18,   etc) but Kian did a great job.

          A: How did Kian do on the exam? Did he get a reasonable grade?

          B: *hatta* bist   gereft.

                SCAL   twenty   got.

                'He got *even* a twenty.'

Since there is only one exam for which there can only be one grade, one should not be able to felicitously use a lexical item with an additive component in its meaning. An additive operator would make the response above odd since the additive meaning would imply that Kian got another grade as well which is incompatible with the context, as shown in (47).

(2.47) B':   #bist   *ham*   gereft.

             twenty   too   got.

             'He got a twenty, too.'

Additionally, consider the example below.

(2.48) Context: I think that the older kids in our school are taller than the younger ones; the older, the taller! But I just realized that, in the school basketball team, where there are many tall students:

          A: *hatta* ye   pesare   koochooloo   qad-boland-tarin-e

SCAL   a   boy-EZ   little   height-tall-superlative-is

'*Even* a young boy is the tallest (player).'

The context makes a little boy being the tallest very unlikely. In addition, the semantics of the superlative ensures uniqueness of the predicate which would mean that there is only one person who is the tallest of all. The context is not additive here and the use of *hatta* is still felicitous. This, I argue, is because this particle is not specified for additivity. Otherwise, if *hatta* had an additive component, the utterance in A above should have been odd, just like in English. Once again, this example would indeed be infelicitous in Persian if an additive operator is used:

(2.49) A':   #ye   pesare   koochooloo *ham*   qad-boland-tarin-e

            a   boy-EZ   little   too   height-tall-superlative-is

            'A young boy, too, is the tallest (player).'

Based on the data above, I argue that *hatta* is a scalar operator in Persian; it triggers a scalar presupposition that makes reference to the unlikelihood, unexpectedness, or surprisingness of its prejacent. Furthermore, *hatta* does not semantically encode additivity.

It should further be pointed out that *hatta* can either precede or follow an NP in Persian. However, this does not affect the felicity of the sentences in (2.44), (2.46), and (2.48) in the given contexts. These examples are felicitous with *hatta* being in postnominal position (see 2.44', 2.46', and 2.48' below) as well which suggests that *hatta* is not specified for additivity regardless of its syntactic position, unlike English *even* which encodes an additive presupposition in prenominal syntactic position.

(2.44')   ba   ye   ostadyar   *hatta* ezdevaj   kard.

           with   a   associate professor   SCAL   marriage   did

           'She married *even* an associate professor.'

(2.46')   bist   *hatta*   gereft.

           twenty   SCAL   got

           'He got *even* a twenty.'

(2.48')   ye   pesare   koochooloo   *hatta*   qad-boland-tarin-e.

           a   boy-EZ   little   SCAL   height-tall-superlative-is

           '*Even* a young boy is the tallest (player).'

To summarize, note that Persian being SOV, it is not entirely obvious from the surface whether *hatta* attaches to the DP focused constituent (e.g., to 'twenty' in 2.46'), or whether it attaches to an adverbial position that contains more material. It could also be that it has both attachment possibilities. I would note with a caveat that Persian might be compatible with an analysis in which *hatta* is additive when it attaches to DP but not when it attaches to an adverbial position, as was argued for English *even* and German *sogar* in Wagner (2013). Crucial in the present analysis is that independently of whether *hatta* has DP or VP attachment, the additive operator ham needs to be inserted if context satisfies the additive presupposition. The syntax of *hatta* is not the focus of the analysis in the present study and I leave the investigation of this hypothesis for future work.

2.3.2.2. *ham* is an additive operator

The goal of this section is to show that *ham* is an additive operator in Persian (section 2.2.2.1), and that it does not trigger a scalar presupposition (section 2.2.2.2), similar to *too* and *also* in English.

2.3.2.2.1. *ham* is [ADD]

Intuitively, Persian *ham* triggers the presupposition that some other alternative to its prejacent is true. The use of this operator is felicitous in contexts that satisfy this requirement, like the response in B below.

(2.50) Context: There was a swimming competition at school and medals were given to the students who reached the end of the pool before others. Kian and Kaveh were the first to reach the end at the same time. They both won the first title and were given two gold medals.

    A: Tell me about the competition yesterday!

    B: Kian   tala   gereft. in   dafe, Kave *ham*   tala   gereft.

         Kian   gold   got.   this   time, Kaveh *too*   gold   got.

         'Kian won a gold. This time, Kaveh *too* won a gold.'

Note that the absence of this particle in the same context, is not felicitous:

(2.51) B':   #Kian tala   gereft. in   dafe, Kave tala   gereft.

         Kian   gold   got,   this   time, Kaveh gold   got.

         'Kian won a gold. This time, Kaveh won a gold.'

The response in B' feels weird because it violates the principle of Maximize Presupposition (Heim 1991). According to this principle, if a presupposition is satisfied in a given context,

the version of the proposition with the presupposition trigger wins over the version without and is successfully chosen by speakers. Given that the context above satisfies additivity, the response in B is preferred over the one in B' since it involves the presupposition trigger *ham* which encodes the additive presupposition.

Furthermore, if *ham* is an additive operator in Persian, one would expect a sentence with *ham* to be infelicitous in non-additive contexts. Consider the example below where the context implies non-additivity:

(2.52) Context: There was a swimming competition at school yesterday where three medals (gold, silver, and bronze) were given to the first three students who reached the end of the pool.

A: Who won the gold medal?

B: # Kian *ham*   tala   bord.

Kian   *too*   gold   won.

'Kian, *too*, won the gold medal.'

The presence of *ham* would only be allowed if there have been multiple winners of gold, like the previous context. The sentence above is odd because it presupposes that there has been some other person(s) who has won the gold, which is not the case.

In summary, I argue that *ham* is an additive operator in Persian. First, there is a strong intuition that *ham* has to be used where additivity is satisfied in context. This I take to be in accord with the principle of Maximize Presupposition. Second, a sentence with *ham* cannot be used in non-additive contexts. This is due to the clash between the additive presupposition triggered by *ham* and the non-additivity of the context.

So far in this section, I have shown that *ham* is [ADD]. But this does not rule out the possibility of it having a scalar component in its meaning. Below, I will show that *ham* does not have a scalar component in its lexical meaning.

2.3.2.2.2. *ham* is not specified for scalarity

If *ham* had a scalar component, its use should be incompatible with a context where scalarity is not satisfied; i,e. where the prejacent is not the least likely proposition. Consider the following examples:

(2.53) Context: A number of linguists including Rosa, our only syntactician, met in the seminar room to discuss some issues in linguistics. Rosa is a renowned syntactician and presumably would know the answer to all of the syntax questions raised. There was a syntax question of which multiple linguists in the room knew the answer. Ash knew the answer, Dan knew the answer, …

roza   *ham*   javab-e   soal-o   midoonest.

Rosa   *too*   answer-GEN question-ACC   knew

'Rosa, too, knew the answer.'

Above, Rosa is assumed to be the most likely person to know the answer to the syntax question. If *ham* had a scalar component, The Persian sentence above should have felt as odd as the English one with *even*. Felicity of the use of *ham* in this example shows that this operator does not have a presupposition inconsistent with the non-scalar context. In other words *ham* does not have a scalar meaning.

Likewise, below, given the non-scalar context in (54) which suggests that Iran is one of the biggest producers of oil, the use of *ham* does not yield infelicity. This I believe shows that this item is not specified for scalarity.

(2.54) Context: Middle-eastern countries, particularly the ones around the Persian Gulf, produce the majority of the world's oil. Saudi Arabia, Kuwait, and Iraq export oil. ...

    Iran   *ham*   naft   sader   mikone.

    Iran   too   oil   export   does

    'Iran, too, exports oil.'

Note that in an NP-*ham* string, the presence of a particular prosody invokes a scalar interpretation. This prosodic effect, where the main prominence falls on the NP associate and *ham* is de-accented, invokes a scalar meaning where the associate is placed low on a likelihood scale. In examples such as (2.53) and (2.54), for instance, this prosodic effect leads to implication of funny/sarcastic assumptions about the focus associate by placing them low on a likelihood scale, which is contrary to reality.

To sum up, I argued in this section that *ham* is an additive operator in Persian. It triggers the presupposition that at least one other alternative to the prejacent has to be true. In addition, I showed that *ham* is not specified for scalarity. If it had a scalar component, the examples above should have been odd in Persian, just like in English where the scalarity of *even* yields infelicity.

2.3.2.3. *hatta*-NP-*ham* encodes scalarity and additivity; [SCAL,ADD]

In section 2.3.2.1., I showed that *hatta* is a scalar focus sensitive item in Persian. In 2.3.2.2., I argued that *ham* is an additive particle. In this section, I will show that when these two particles associate with an NP, in a string of *hatta*-NP-*ham* or NP-*ham*-*hatta*, they compose

semantically and as a result, the combination of *hatta* and *ham*, in either word order[29],

makes the semantic contribution that prenominal *even* does in English.

Below, I will show that when used together, *hatta* and *ham* can only appear in scalar

additive contexts. If either presupposition or both is not satisfied, in other words, if the

context is either scalar non-additive (2.56) or non-scalar additive (2.57), or non-scalar non-

additive (2.58), the use off *hatta*-NP-*ham* yields infelicity.

(2.55) <u>Scalar additive context</u>

> Context: Amir is not a good friend and hasn't been talking to us for many years. No
> one expected him to show up at last night's party.

> A: Last night's party was very busy.

> | a: | *hatta* | amir | *ham* | oomade | bood. |
> |---|---|---|---|---|---|
> | | even | Amir | too | come | was |

> 'Even Amir had come.'

> | b: | # *hatta* | amir | | oomade | bood. |
> |---|---|---|---|---|---|
> | | even | Amir | | come | was |

> | c: | #amir | | *ham* | oomade | bood. |
> |---|---|---|---|---|---|
> | | Amir | | *too* | come | was |

> | d: | # amir | | | oomade | bood. |
> |---|---|---|---|---|---|
> | | Amir | | | come | was |

The context above makes Amir having come to the party the most unexpected among the

other propositions. In addition, the context satisfies additivity in that multiple people have

gone to the party. Maximize presupposition would predict that the presence of the two

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[29] I will only use the first word order, *hatta*-NP-*ham,* which is used in spoken Persian, throughout the chapter but make explicit that the two word orders give rise to the same semantic construct.

operators, *hatta* and *ham*, as shown in (a) should win over their absence in this context, as shown in (b-d). Since the use of *hatta*-NP-*ham* is felicitous in scalar and additive contexts like above, I argue that in this string *hatta* and *ham* separately contribute their specifications for scalarity and additivity, respectively. *hatta* contributes [SCAL] and *ham* contributes [ADD] and these components compose semantically.

The use of this combination is expected to yield infelicity in contexts that fail to satisfy either of the components:

(2.56) <u>Scalar non-additive context</u>

Context: Claire is not a highly educated person and also never wanted to marry a highly educated person. But to everyone's surprise, she married someone who teaches at university.

# *hatta*	ba	ye	ostadyar	*ham*	ezdevaj kard.
even	with	a	associate professor	too	marriage did

'She married even an associate professor.'

The context above satisfies scalarity; for Claire, it is very unlikely to have married an academic person. In addition, this context implies uniqueness- marrying only one person. Hence, presence of an additive operator would trigger an additive presupposition which is in conflict with the uniqueness presupposition and yields infelicity.

Now, assume that the context does not satisfy scalarity but does imply additivity.

(2.57) <u>Non-scalar additive context</u>

Context: A number of linguists including Rosa, our only syntactician, met in the seminar room to discuss some issues in linguistics. Rosa is a renowned syntactician and presumably would know the answer to all of the syntax questions raised. There was a syntax question of which multiple linguists in the room knew the answer. Ash knew the answer, Dan knew the answer, …

# *hatta*	roza	*ham*	javab-e	soal-o	midoonest.
Even	Rosa	too	answer-GEN	question-ACC	knew

'Even Rosa knew the answer.'

Here, multiple people have had the answer; therefore, the context satisfies additivity. The presence of the scalar operator *hatta*, however, is in conflict with the assumption that Rosa is indeed the most likely person to have known the answer, non-scalarity of the context. Therefore, presence of *hatta* renders the sentence odd.

(2.58) <u>Non-scalar non-additive context</u>

Context: Only Alex scored a goal in the game. Speaker doesn't know anything about soccer players.

# *hatta*	aleks	*ham*	gol	zad.
even	Alex	too	goal	hit

'Even Alex scored a goal.'

The context above ensures that one goal has been scored; therefore, the presence of the additive operator *ham* is infelicitous. In addition, the context is non-scalar: it is not the case that Alex is the least likely person to have score given the absence of a salient scale, the speaker does not know about players. Therefore, the use of the scalar item *hatta* is not licensed by the context, as well. The whole assertion is, therefore, odd because neither presupposition is satisfied in the context.

2.3.3. Summary

The goal of this section was to present an analysis of how the scalar and additive presuppositions of *even* are triggered in Persian using the features [SCAL] and [ADD] as inspired by Crnič's decomositional theory of *even* in English. I showed that in Persian:

i.   *hatta* is specified for scalarity, but does not encode additivity. Therefore, I will assume that *hatta* has the following feature representation: [SCAL]

ii. *ham* is an additive operator in Persian. It is not specified for scalarity and encodes an additive presupposition only: [ADD]

iii. *hatta*-NP-*ham* is a string in which *hatta* and *ham* contribute their specifications for scalarity and additivity, respectively: [SCAL,ADD]. *hatta* contributes [SCAL] and *ham* contributes [ADD] in this string. The combination is only felicitous if both presuppositions are satisfied in the given context.

2.4. Conclusion

In this chapter, I have described the theoretical background I am assuming in the present research for an investigation of the second language acquisition of scalar and additive focus-sensitive presupposition triggers in English and Persian. The problem space of the current study is restricted to the second language acquisition of English *even* in two syntactic positions for which the following feature representations are adapted:

1. Prenominal *even* [SCAL,ADD]
2. Postnominal *even* [SCAL]

Second, this research concerns the second language acquisition of the Persian lexical items responsible for the realization of the above presuppositions:

1. *hatta-ham* [SCAL,ADD]
2. *hatta* [SCAL]

The next chapter will present to a review of the highlights of certain second language acquisition theories, focusing on the Feature Reassembly Hypothesis of Lardiere (2005, 2008, 2009, and subsequent work), and in particular in relation to the acquisition of semantic features.

CHAPTER 3

THEORIES OF SECOND LANGUAGE ACQUISITION

3.1. Introduction

The present study is framed within generative approaches to second language acquisition (SLA). In addition to the characterization of the L2 learners' linguistic knowledge, one goal of SLA approaches is to explain what is and what is not acquirable in the L2 and how the acquirable unconscious knowledge is attained by L2 learners. Besides that, a lot of focus within generative approaches to SLA has been on the *initial* as well as the *ultimate* states of L2 acquisition; the question of what kind of knowledge L2 learners start off with and what knowledge they transfer from their L1 as well as whether and to what extent native-like ultimate attainment is possible in the L2.

The current study was designed as an investigation of the Feature Reassembly Hypothesis (FRH) (Lardiere 2005, 2008, 2009, and subsequent work). The FRH assumes two stages in L2 acquisition: First, the *mapping* stage, which involves a one-to-one mapping of L1 feature sets onto those of the L2, and second, the *reassembly* stage during which L2 learners reconfigure/reassemble their L1 feature matrices based on those of the L2. The reassembly stage is predicted to be hard for L2 learners, if the L2 differs from the L1 in the

corresponding feature specifications. The focus of the present research is on investigating what is involved in the stages of feature mapping and reassembly and the learner tasks in each stage in acquisition and what the sources of complication and difficulty in L2 acquisition could in principle be. This study will build up on the implementation of the FRH as per the proposals of Slabakova (2009) and Cho and Slabakova (2014, 2015) where the FRH has been characterized in a more detailed way.

As established in the previous chapter, Persian and English differ in terms of how the presuppositions of certain focus-sensitive triggers are realized in the two languages. Of interest in the present study are triggers that are responsible for the scalar and additive presuppositions associated in the literature with English *even*. I operationalized these presuppositions in terms of privative features inspired by Crnič's (2011) semantic theory of *even*, where the presuppositions triggered by *even* are written into the lexical semantics of this focus-sensitive item. Besides, I concluded by assuming Wagner's (2013, 2015) syntactic proposal about *even* according to which word order plays a role in the presuppositional contribution of *even* in English. Subsequently, I implemented Crnič's feature-based view of the semantic encoding of presuppositions in the analysis of the Persian particles *hatta*, *ham*, and *hatta-ham* combinations. This thesis aims at exploring the predictions of the FRH with respect to the L2 acquisition of the semantic representations of the focus-sensitive presupposition triggers of interest in Persian and English. I further hope to provide insights into the existing literature on how feature reassembly operates and what mechanisms are involved in it that could potentially complicate (or ease) feature reassembly and L2 acquisition.

The structure of this chapter is as follows. First, I will give an overview of some of the main tenets of generative approaches to SLA. Second, I will present a number of theories of L2 acquisition that have focused on formal features embracing assumptions in the Minimalist Program, as an evolution of the Principles and Parameters model. Then, I will introduce the FRH which is the framework within which the present study is conducted. Next, I will summarize a number of relevant studies where the FRH has been tested and further developments of the theory have been suggested, namely the feature characterizations of Cho and Slabakova (2014, 2015). I will, subsequently, map the mentioned characterization onto the semantic features in question in the present thesis. In other words, I will develop a characterization for the semantic features related to the focus-sensitive operators in the present study building up on the architecture proposed by Cho and Slabakova. Finally, I will elaborate on the applications of the FRH in the investigation of the L2 acquisition tasks that will be defined for the L2 learners in the present study.

3.2. Universal Grammar and the Principles and Parameters Theory in SLA

Universal Grammar (UG) has been introduced as "an element of shared biological endowment" (Chomsky 1965, 1975, 1981) which characterizes the representation and acquisition of natural languages. The UG theory assumes that speakers are born with innate knowledge of a set of invariant universal *principles* for all languages as well as a finite number of *parameters* the different values of which account for cross-linguistic variation, the Principles and Parameters theory (P & P theory; Chomsky 1981, 1986). Parametric variation among languages of the world is assumed to be a result of the different settings of the parameters in individual languages. L1 acquisition is, therefore, viewed as a process of

parameter setting whereby children set the values for the parameters they are born with based on primary linguistic data (PLD).

Adult L2 acquisition has also been assumed to be constrained by the UG in the generative SLA framework. Haegeman (1988), for instance, describes the task of L2 learners within the framework of the P & P as follows:

> "To go from the L1 to the L2, learners will often have to reset existing parameters or reassign values to them. Failure to do so will mean that the learner does not attain the L2." (p. 255)

Failure in reaching target-like proficiency in L2 could then be descriptively modelled as the inability to successfully reset values of the L1 parameters into those of the L2 (Lardiere 2009). This is the result of parametric differences between the L1 and L2 which can be a source of difficulty and/or delay in L2 acquisition. Since all L2 learners start the task of acquisition with a well-established linguistic system of fixed parameters ('parametrized UG' as termed by Klein, 1986), namely their L1, one question of interest in SLA research is whether and to what extent L1 transfer plays a role in parameter setting. Below, some discussion of the role of L1 transfer in SLA is provided.

3.3. L1 transfer and persistent variability

Research within the generative SLA framework in the context of the P & P theory has assumed that the task of an L2 learner is to reset the values of their L1 parameterized linguistic system based on the L2 input they receive. Many of the systematic errors in the interlanguages of L2 learners have been attributed to the role of their native language (White 1985, 1989, 2003, Schwartz & Sprouse 1996, Whong-Barr & Schwartz 2002,

Slabakova 2003, and many others). Generative SLA theories have assumed the role of transfer as ranging from No Transfer to Full Transfer. The No Transfer view (Epstein et al. 1996) dissociates the L2 grammar from the grammar of the L1; there is no transfer from the native language into the L2 grammar. All L2 learners, therefore, are expected to attain the same ultimate state in the L2 grammar regardless of their L1s. Partial Transfer views assume that only certain aspects of the L1 transfer; e.g., lexical categories only and not functional ones (Vainikka & Young-Scholten 1996). Many studies (White 1985, Hawkins & Chan 1997, Schwartz & Sprouse 1996, etc.), however, have shown evidence of full L1 transfer in the interlanguage of L2 learners. These studies confirm that in principle any L1 property can transfer particularly with respect to functional categories. White (1992), for instance, shows that L1 French L2 learners of English transfer the strong feature value for Agr from French into the interlanguage which results in a word order (verb-adverb placement) that is compatible with French but not English.

SLA research has further shown that native-like ultimate attainment is not always possible for L2 learners; even highly advanced L2 learners occasionally display non-target-like performance. This is evidenced as performance of L2 learners diverges from the L2 grammar and demonstrates persistent variability, as described by White (2003b, p. 178):

"It is well known that L2 learners exhibit optionality or variability in their use of verbal and nominal inflection and associated lexical items. Morphology relating to tense, agreement, number, case, gender, etc., as well as function words like determiners, auxiliaries and complementizers, are sometimes present and sometimes absent in spontaneous production data, in circumstances where they would be obligatorily produced by native speakers. Furthermore, when morphology

is present, it is not necessarily appropriate; certain forms are overused occurring in contexts where they would not be permitted in the grammar of a native speaker."

Persistent variability in the L2 grammar of L2 learners has been viewed as an argument against the P & P view of L2 acquisition. Since the P & P view represents an all-or-nothing phenomenon (Kemenade & Nigel 1997), it is not entirely clear why L2 learners demonstrate persistent optionality in the L2. In other words, when a parameter is fixed by an L2 learner, it should be set once and for all in a speaker's interlanguage. Lardiere (2008) maintains, based on this idea, that although the concept of resetting parameter values is necessary in explaining the mechanisms involved in SLA, it is not sufficient as it fails to explain persistent variability as evidenced in Lardiere (1998) which shows that Patty, a fluent Chinese L2 speaker of English, successfully shows target-like knowledge of abstract features such as nominative case assignment and verb placement but fails to perform in a native-like way for the marking of inflection for tense and agreement, even after 18 years of exposure to L2 native grammar.

In the following section, we will consider two main research streams in SLA that have described sources of persistent variability in L2. These theories have departed from parameter resetting views in light of the tenets of the Minimalist approach (Chomsky 1995 and subsequent work) where *features* have been used to explain cross-linguistic variation and the architecture of language.

3.4. Feature-oriented accounts of SLA; the Minimalist Program

With the emergence of Chomsky's Minimalist Program (Chomsky 1995, 2001), the notion of parameters was reduced to morphological properties in the lexicon represented by features and cross-linguistic variation was explained in terms of the different encoding of these formal features into the lexical items, difference in feature bundles (Giorgi and Pianesi 1997). Lexical items, according to the Minimalist Program are matrix representations of phonological, syntactic, and semantic features. Within this framework, much of the research in the field of generative SLA has also centered around the implementation of formal features into the task of L2 acquisition. As Travis (2008, p.23) maintains:

> "Features are at the heart of recent Chomskyan syntactic theory and within this theory at the heart of language variation. Therefore, any study of language acquisition done within this framework is now a study of the acquisition of features."

With the introduction of features, SLA research on the sources of persistent variability was redirected from parameter-resetting accounts to theories that investigate sources of persistent variability in relation to the extent to which surface morphology equates to the underlying feature representations in SLA. There are basically two schools of thought that have addressed this question. First, some researchers have attributed defective morphology to unavailability of certain feature representations in the acquisition of a second language. Second, there are theories which maintain that defective morphology does *not* imply defective/absent grammatical representations. Below, I will review the two

most influential theories accounting for the divergence between L2 performance and the target language.

3.4.1. Representational deficit approaches;
source of variability in feature representations

Some of the studies that have taken formal features into consideration in investigating the sources of persistent variability in L2 grammars have proposed that L2 learners fail to acquire new formal features that are not instantiated in their L1. The Representational Deficit Hypothesis (Hawkins 2000, 2005, Hawkins and Chan 1997), which is a more recent version of the Failed Functional Feature Hypothesis (Hawkins and Chan 1997), for instance, assumes that adult learners lack the grammatical representations of features that are not present in their L1 and therefore cannot successfully acquire associated morpho-syntactic forms. The Representational Deficit Hypothesis specifically maintains that uninterpretable features which are not already activated in the L1 pose great problems for L2 learners after the critical period because unselected uninterpretable features are no longer accessible to them. To give an example, Hawkins and Chan (1997) and Hawkins and Hattori (2006) hypothesize that Chinese and Japanese learners of English, should not be able to acquire the strong wh- feature of English since their L1s do not have such a feature. Variability, optionality, and non-native L2 grammars are attributed to the inability of learners to reset the formal feature representations and success is achieved only if the L2 uninterpretable features are existent in the grammar of the mother tongue. Hawkins and Hattori (2006) state that:

"The prediction is that speakers of an L1 (or L1s) with uninterpretable feature [uγ] also present in the L2 will fully acquire target representations involving the feature [uγ]. But speakers of an L1 (or L1s) lacking [uγ] who are exposed to an L2 beyond some point of early development will no longer have that feature available, and will construct representations for the relevant L2 structures with alternative resources made available by UG." (p. 295)

Interpretable features are, however, always available in order to allow construction of new lexical items as they are "given by genetic endowment and are present throughout life" as Hawkins and Hattori (2006, p. 271) assume.

In addition, all other components of UG remain available in L2 acquisition; i.e. fundamental computation devices such as Merge, Agree, or Move as well as uninterpretable features already selected in the L1 (Hawkins & Hattori 2006, Tsimpli & Dimitrakopoulou 2007).

In another study, Hawkins and Liszka (2003) tested the spontaneous oral production of past tense marking in advanced L2 learners of English from three language backgournds: Chinese, Japanese, and German L2 learners of English. While English, German, and Japanese choose to morphologically mark past tense, Chinese does not. Under the RDH, Chinese speakers should indicate a low rate of past-tense marking compared to German and Japanese speakers, since their L1 lacks the feature ([+past]) and they should not be able to reset this feature value to the L2 value. Their results indicate that, as predicted, the German and Japanese speakers mark past tense significantly more than the Chinese, both in regular and irregular forms. They attribute the Chinese speakers' failure in

the marking of past tense in English to the fact that the relevant "feature is not selected in Chinese, and is subject to the critical period" (Hawkins and Liszka 2003, p. 25).

Against the assumptions of representational deficit approaches, full access approaches to second language acquisition claim that all UG features are accessible to second language acquirers throughout acquisition and sources of variability and optionality do not lie within grammatical representations. This line of research will be discussed below.

3.4.2. Full access approaches:

source of variability *not* in feature representations

Contrary to representational deficit theories of SLA, full access accounts such as the Full Transfer Full Access Hypothesis (Schwartz & Sprouse 1994, 1996) claim that second language learners *can* successfully acquire features that are not present in their L1. Proponents of the Full Transfer Full Access Hypothesis maintain that L2 learners have complete access to UG's full inventory of both interpretable and uninterpretable features (White 2003, Duffield and White 1999, among many others); their starting point in SLA is a fully established L1 grammar (Full Transfer) and learners of the same L2 with different L1s are predicted to perform differently in the course of SLA since their initial systems of feature representations are different. This model predicts that L2 input can trigger 'restructuring' of L1 feature representations (Schwartz & Sprouse 1996, p. 41) within UG options (Full Access to UG); in other words, speakers are forced to revise L1 representations based on L2 input and UG principles, if the L1 representation is not appropriate.

Supporters of this framework attribute variability and optionality to sources such as L1 transfer, processing deficits, and/or interface-related problems for adult second language learners such as the syntax-morphology interface (Haznedar and Schwartz 1997, Prévost and White 2000, Lardiere 1998 and subsequent work), the syntax-prosody interface (Goad and White 2006), or the syntax-pragmatics interface (Sorace 2000, Sorace and Filiaci 2006).

Some researchers (Haznedar and Schwartz 1997, Lardiere 1998, Prévost and White 2000), who follow the premises of full transfer/ full access framework, have argued that learners' errors are not due to deficiency in syntactic representations but arise as a result of a 'mapping' problem between the syntactic component and the morphological/lexical component. Lardiere (2000) maintains that "The problem lies in figuring out how to spell out morphologically the categories they already represent syntactically, i.e., the *mapping problem*". Lardiere (1998a) investigates the oral production of the syntactic phenomena related to *finiteness* T(ense) in Patty, an advanced Chinese L2 learner of English. She observes that although Patty does not demonstrate native-like production of verbal morphology related to past tense and agreement, her production of overt subjects, case-marking, and verbal placement does not indicate significant variability. In fact, her performance is strikingly accurate with respect to these syntactic properties. Lardiere (2007) concludes from Patty's performance that she has acquired the right feature value for T. Her failure in marking past tense and agreement, Lardiere suggests, is the result of failing to correctly 'map' the syntactic features to the morphological (or phonological) module. The source of variability is, therefore, not related to narrow syntax, in Lardiere's view, but is attributed to failure in mapping syntactic features on to the corresponding

phonological forms. In later work, Lardiere (2005, 2007, 2008, 2009) claims that the observed morphological variability and optionality occur as a result of the challenge second language learners encounter in '*reassembling*' their L1 feature specifications into target feature sets, the FRH. The difficulty in second language acquisition, under this theory, is not to acquire new features; but rather the acquisition of features which are 'configured' differently from the L1 feature sets.

Since the current study is situated in the context of the Feature Reassembly Hypothesis (FRH), this theory will be discussed in more detail below.

3.5. The Feature Reassembly Hypothesis

3.5.1. The proposal

Research in second language acquisition has shown that some of the systematic errors that second language learners make can be attributed to the influence of their native language (L1 transfer). As discussed before, many generative approaches to second language acquisition have focused on the role of L1 transfer ranging from No Transfer (Epstein et al. 1996) to Full Transfer (Schwartz & Sprouse 1994, 1996, etc). Lardiere's (2005, 2007, 2008, 2009) Feature Reassembly Hypothesis suggests, following in the steps of the Full Transfer Full Access Hypothesis (Schwartz & Sprouse 1994, 1996, White 1985), that second language learners bring to the acquisition task a system of formal features that are already assembled into their L1 lexical items. The task of acquisition, under her view, consists of two main mechanisms or stages: 'mapping' and 'reassembly' of formal features (syntactic and semantic). Second language learners start off by an initial mapping between the feature

sets from their L1 onto feature matrices of the L2, followed by reassembly of features where differences exist between the L1 and the configurations in the L2. According to this theory, feature reassembly is predicted to be particularly difficult in cases where the target features exist in the L1 but are configured differently from the L2. This account builds on Lado's (1957) Contrastive Analysis Hypothesis which assumes that L2 difficulties arise as a result of L1-L2 differences and the framework of Distributed Morphology (Halle and Marantz 1993) which offers "a theory of features that determines when they must cluster in morphemes and when they may surface in separate terminal elements" (Halle & Marantz, 1993, p. 133).

In what follows, I will elaborate on the two stages of 'mapping' and 'reassembly' which are intended to explain the learning tasks of the second language learner, according to the Feature Reassembly Hypothesis.

3.5.1.1. Feature mapping

Initially, L2 learners, who bring to the SLA process a system of formal feature bundles already assembled into their L1 lexical items, establish a direct mapping between L1 and L2 forms. Second language learners "look for morpholexical correspondences in the L2 to those in their L1, presumably on the basis of semantic meaning or grammatical function (the phonetic matrices will obviously differ)" (Lardiere 2009, p. 191). In other words, as stated by Cho and Slabakova (2015), "the first step in L2 acquisition is mapping based on similarities between the functional meanings of the target morphemes and those of the L1 morphemes".

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3.5.1.2. Feature reassembly

When feature mapping fails, that is, if the feature specifications in the target language do not coincide with those of the L1, second language learners will need to reassemble the configurations that they transfer from their L1. The task of the second language acquirer is to monitor the L2 input and accordingly modify and revise the L1 feature representations by deleting or adding features; hence, feature reassembly. Feature reassembly can be conceptualized as a process of assembling L2 feature sets based on L1 feature bundles and their formal contrasts with the L2 input.

Lardiere's theory posits that ultimately all features, regardless of interpretability, are in principle acquirable. However, the process of feature reassembly "may be slow to occur or may not occur at all if the relevant evidence for the formal or semantic feature is rare or contradictory in the linguistic input" (Cho and Slabakova 2014).

In addition to the challenging process of dissociating and/or adding certain features, Lardiere (2009) argues that the mechanism of feature reassembly involves figuring out "the contexts in which [a particular form] can or cannot or must appear and restrictions on its use must all be painstakingly acquired and are part of the learner's developing morphological competence" (Lardiere, 2008, p. 236). This, Lardiere (2009) suggests, would involve the second language learners' close monitoring of the L2 input and figuring out the answers to the following three questions:

▪ "With which functional categories are the selected features associated in the syntax, and how might this distribution differ from the feature matrices of functional categories in the L1?

▪ In which lexical items of the L2 are the selected features expressed, clustered in combination with what other features?

▪ Are certain forms optional or obligatory, and what constitutes an obligatory context? More specifically, what are the particular factors that condition the realization of a certain form (such as an inflection) and are these phonological, morphosyntactic, semantic or discourse-linked?"

(Lardiere 2009, p.175)

The L2 learner in the process of feature reassembly, therefore, confronts the taxing task of not only reconfiguring their L1 feature representations into those of the L2, but also figuring out under which language-specific contexts and conditions those features are lexicalized in the L2. These could in principle pose tremendous challenges to the second language acquirer and, in principle, hinder the process of second language acquisition.

White (2009) raises a question about the predictive power of the FRH, in particular, whether the FRH can predict in advance which features or feature combinations are in principle more difficult for L2 learners based on the kind of feature reassembly involved. While this is a legitimate question, as noted by Lardiere (2009, p. 420), to investigate within the FRH proposal, not much work in the literature has been devoted to this domain.

Slabakova (2009), Cho and Slabakova (2014), and Cho and Slabakova (2015) however, have offered significant development in this domain which will be discussed later in section 3.3.5.2. The current study wishes to pursue the same goal of providing further development as to the predictions of FRH can be implemented in SLA.

3.5.1.3. Summary

In summary, the FRH offers a new direction in the field of second language acquisition which focuses no longer on the question of the presence or absence of features in the acquisition of a second language, but on feature matrices and their lexical realizations across languages. This theory maintains that the learning of a second language feature system involves a 'mapping' stage and a 'reassembly' stage, where the learner reorganizes their L1 feature sets.

The FRH suggests that feature reassembly may pose "considerable difficulty" (Choi & Lardiere 2006, p. 240) to L2 learners as the learning of the second language is affected by "lingering transfer effects". Central to the FRH, I believe, is the question of what the process of feature reassembly involves and in what respects reassembly can yield "considerable difficulty" for learners. While it is generally agreed that feature reassembly in second language acquisition is difficult and time-consuming, not much research has been done investigating the sources of the predicted difficulty. Admittedly, the mapping stage, during which the second language learner monitors L2 input for correspondences between their L1 and the L2, provides an easier ground for empirical testing. More research is required, however, to address the questions concerning details of the mechanisms involved in the 'reassembly' stage. In the present study, my goal is to concentrate mainly on the sources of difficulty in feature reassembly; what triggers potential complications for L2 learners in feature reassembly. In particular, I will focus on the lingering effects of L1 and the extent to which these effects could in principle ease or complicate the L2 learners' tasks in L2 acquisition.

In what follows, I will overview some of the existing studies that have provided insights into the challenges that second language learners confront in the 'reassembly' stage of Lardiere's FRH, particularly with respect to the acquisition of semantic features[1], which is what the present dissertation concerns.

3.5.2. L2 acquisition of semantic features within the FRH

As noted earlier, not much research has been done on the 'reassembly' stage of the FRH. Slabakova (2009) points out that "concrete testable predictions about difficulty and order of acquisition need to be formulated" within this theory, as with any new proposal. In this section, we will introduce some studies that have provided empirical testing of the 'reassembly' stage of the FRH, particularly by investigating the second language acquisition of semantic features.

Following Ramchand and Svenionius (2008), Slabakova (2009) and Cho and Slabakova 2014, 2015) assume that all languages have the same universal Conceptual Structure (Jackendoff 2002) or Conceptual-Intentional system (Chomsky 2004) and that languages vary in the way they choose to encode those universal meanings. For instance, while some languages may use overt morphological items, others might use extralinguistic context to encode certain aspects of meaning. Slabakova (2009 and subsequent work) further holds that in language acquisition, when context has to fill in a semantic feature value, the linguistic evidence may not always be sufficient or consistent and this potentially presents a more difficult task to the learner than if a morpheme exists in the language to

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[1] It is assumed here, consistent with Slabakova (2009 and many others), that a 'semantic feature' is a 'grammatical meaning encoded by languages of the world'.

encode that meaning. She maintains that in second language acquisition if there is a mismatch between the L1 and the L2 in terms of how meaning is encoded, the task of the second language learner is more challenging and arduous than situations which involve a 'mapping' only. Building on this position, Slabakova argues that there is a spectrum of difficulty in second language acquisition whereby the process is most difficult if a certain feature value has to be fixed by discourse context in one language and is realized in a morphological item in the other. If both languages have morphemes that express the same feature distributions, this is not expected to yield great difficulty in acquisition, according to Slabakova and as predicted by Lardiere's mapping stage.

Cho and Slabakova (2015) investigate the acquisition of specificity in L2 Russian by L1 Korean and English speakers. Russian *kakoj-to*, English *some*, and Korean *eotteon* share the same feature specifications with respect to the semantics of specificity: [-definite, -referential, +specific]. Therefore, the acquisition task is predicted to be easy for both learner groups since presumably no reassembly is required. The corresponding lexical items to the above feature matrix should be easily detectable in the L2 input and learned with not much- or even no- difficulty quite early on. In addition to *kakoj-to*, Russian lexicalizes the feature set [-definite, -referential, -specific] into *kakoj-nibud*. This feature set is not morphologically realized in the two L1s in this study, Korean and English. The learning task, therefore, for the Korean and English L2 learners of Russian would have to involve feature reassembly of their most similar L1 configurations to the target feature set, i.e., the representation corresponding to the Russian *kakoj-to* ([-definite, -referential, +specific]), into the target feature set for *kakoj-nibud*: [-definite, -referential, -specific]. As

such, the L2 acquisition of *kakoj-nibud* would be predicted to be more challenging and difficult to the learners than *kakoj-to*.

The authors compared the acquisition of *kakoj-to*, which would involve only the mapping stage, with that of *kakoj-nibud* which would involve reconfiguration from the L1 feature sets for the closest representations (of *eotteon* and *some*) onto the target L2 feature set. Their results suggest that although overall the acquisition of Russian indefinite determiners was not difficult, *kakoj-to* was "the more easily mapped determiner"; both learner groups successfully accepted this determiner in specific contexts. In non-specific contexts, however, the authors noted a delay in acquisition which they attribute to the reassembly of the feature configurations involved in the acquisition of this determiner. The authors conclude that whether or not feature reassembly is required in second language acquisition is a significant factor to consider.

Cho and Slabakova (2014) present a substantial development to Lardiere's FRH by identifying factors that should be considered in the investigation of the learning tasks of L2 learners in the process of feature reassembly. They provide a classification of features and, more importantly for our goals in this study, of feature encoding options that are available to learners cross-linguistically. This classification helps us to better understand what idiosyncratic strategies various languages use to express universal semantic concepts. Further, one could empirically describe the L2 learners' acquisition tasks by considering the encoding systems used for semantic concepts in their L1 and L2.

Cho and Slabakova suggest, following Ramchand and Svenonius (2008) and building up on Slabakova (2009), that feature expressions are either 'overt' or 'covert'; a feature is

'overtly' expressed if it is encoded by dedicated morphology in a language. An example would be the realization of [past] is English through the overt morpheme '-*ed*'. On the other hand, some features are expressed 'covertly'; a feature is 'covert' if its value needs to be supplied by context (e.g. past tense in Chinese which is signalled by the use of adverbs such as *yesterday*, *last week*) or if syntactic movements and word order changes (e.g. word order changes to encode information structure) are required to signal them. Furthermore, features can be expressed 'directly' or 'indirectly'. If a feature provides the primary meaning of a morpheme (e.g. *a* for indefinite and *the* for definite interpretations in English), it is realized 'directly'; it directly maps a semantic feature to a morphological expression. On the other hand, some others features are encoded in expressions in addition to some primary meaning, hence 'indirect' mapping of a feature to an expression (e.g. demonstratives like *this* which indirectly signal definiteness).

Cho and Slabakova (2014) investigate the second language acquisition of expressions of definiteness in L2 Russian by two L2 groups: Korean and English speakers. The focus of the study is on two means Russian[2] uses for the expression of definiteness. One is through its possessor system and the other one is through word order: Russian uses possessor modifiers (adjectival for indefinite and nominal for definite interpretations) and word order to encode definiteness. In other words, definiteness is marked either overtly and directly by possessor modifiers or covertly and indirectly through word order changes. English has overt and direct morphology for the semantic property in question (*a* for indefinite and *the* for definite). Korean, on the other hand, like Russian, does not mark

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[2] Their study focuses on two ways out of the many ways definiteness is signalled in Russian (Cho and Slabakova 2014).

definiteness morphologically by the use of articles. Korean partially shares the possessor system of definiteness expression with Russian. Possessor modifiers are all nominal and the difference in interpretation with respect to definiteness is signalled by case-marking (nominative vs. genitive) as well as word order.

The two L2 groups, Korean and English L2 learners of Russian, participated in an offline felicity judgment task. The authors first focus on the acquisition of the first means of definiteness expression in Russian; through the possessor system. Results from this study indicate that the Korean group was more accurate in acquiring definiteness marked through the possessor system than the English group since both Korean and Russian use the indirect expression of definiteness in possessors. The authors, therefore, conclude that the learning task must be more difficult when the property in question is expressed directly in the L1 (English) and indirectly in the L2 (Russian). In other words, the authors claim that it must be more challenging to acquire a feature when it is expressed overtly in the L1 but covertly in the L2 than when a feature is expressed indirectly in both L1 and L2 (Korean and Russian).

They further test the acquisition of definiteness expressed through word order changes. Although both Korean and Russian use word order to signal the different interpretations related to definiteness (indirect and covert expression), results of this study show that the English group is more successful in acquiring the word order effects in Russian than the Korean group. Korean learners, even the advanced group, did not perform target-like. The authors attribute the Korean group's low success rate in the acquisition of word order effects in Russian to the fact that the learning of the *conditions* licensing word

order changes, conditions necessitating reassembly, must have been more difficult for them, hence more complicated and taxing. They conclude from this finding that the biggest challenge in the acquisition task is to reconfigure an indirectly and covertly encoded feature in both the L1 and L2 when it necessitates reassembly.

In summary, Cho and Slabakova (2014) develop the learning model introduced by Lardiere's FRH further by introducing significant factors involved in L2 acquisition. These factors represent useful distinctions in terms of 'overt' versus 'covert' and 'direct' versus 'indirect' mapping of semantic features onto morphological expressions; distinctions which help illustrate the sources of difficulty in L2 acquisition, a question addressed in the present research. Below is a summary of the main points that can be concluded from their research on the 'reassembly' stage of Lardiere's FRH.

First, whether or not reassembly is required is an important question to address in second language acquisition research. Phenomena which involve reassembly of L1 feature sets into those of the L2 are more taxing on learners than situations which involve simple mapping of L1 to L2 morphemes.   Second, overt versus covert encoding of features plays an important role in the complication of the acquisition situation; it is more challenging to acquire a feature that is encoded overtly in the L1 (English system for definiteness) but covertly in the L2 (Russian possessor system) than when a feature is expressed indirectly in both L1 and L2 (Korean and Russian use of possessors). Third, second language acquisition is most arduous if a feature is expressed indirectly and covertly in both L1 and L2 but reassembly is required, as evidenced by the case of the acquisition of word order effects on definiteness by Korean learners of Russian.

3.6. FRH application and predictions for the present study

The present research focuses on the second language acquisition of focus-sensitive presupposition triggers in Persian and English. More specifically, this study concerns the L2 acquisition of focus-sensitive lexical items whose semantic feature specifications trigger certain presuppositions. The semantic contribution of the focus-sensitive item *even* in English and *hatta* and *ham* in Persian was described in chapter 2 where I concluded by adopting Wagner's (2013, 2015) syntactic generalization about *even* in English in combination with Crnič's (2011) decompositional view of the semantics of *even* for English. I further developed an analysis of the semantics of the relevant focus-sensitive items in Persian. In this subsection, I will first briefly review the theoretical assumptions made in this study about the semantics of these focus-sensitive items in both Persian and English. Then, I will elaborate on how the FRH can be applied in the present study, by formulating predictions of this theory, in order to investigate the L2 acquisition of these lexical items.

3.6.1. Summary of theoretical assumptions about *even*, *hatta*, and *ham* in features

In chapter 2, the semantic feature configurations assumed for *even*, *hatta*, *ham,* and *hatta-ham* combinations were discussed[3]. It was shown that in English, the expression of the semantic feature [ADD] in *even* is conditioned by word order:

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[3] Recall the denotations of [SCAL] and [ADD] along with their definedness conditions below:

$||\text{ SCAL }||^{g,c}(C, p, w)$ is defined only if $\forall q \in C\ [p \neq q \rightarrow p \lhd_c q]$.
If defined, $||\text{SCAL }||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

$||\text{ ADD}||^{g,c}(C, p, w)$ is defined only if $\exists q \in C\ [p \neq q \wedge q(w) = 1]$.
If defined, $||\text{ADD}||^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

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- ➤ Prenominal *even* is both scalar and additive: [SCAL,ADD]

- ➤ Postnominal *even* is only scalar: [SCAL]

Additionally, it was argued that in Persian:

I. *hatta* is scalar: [SCAL]

hatta has the same feature representation regardless of its syntactic position with respect to the noun phrase it associates with.

II. *ham* is additive: : [ADD]

ham always follows the noun phrase it associates with.

III. The two particles above semantically compose in *hatta*-NP-*ham* and NP-*ham*-*hatta* combinations and each contributes a semantic component leading to scalar and an additive presuppositions: [SCAL,ADD]

3.6.2. Applications of the FRH in the present research

To discuss the applications of the FRH in the L2 acquisition of the focus-sensitive items above, it is helpful to illustrate, step by step, the learning tasks of the L2 learners of Persian and English within this theory. To do so, I will first characterize the semantic contribution of the particles in question implementing the feature descriptions of Cho and Slabakova (2014, 2015). Subsequently, I will discuss the learning tasks and predictions involved in the acquisition of English focus-sensitive items by native speakers of Persian. Then I will proceed in the other direction; L1 English learners of L2 Persian. I will focus in each learning direction on the processes of 'mapping' and 'reassembly', as per the FRH and by taking into account the feature distinctions as noted by Cho and Slabakova (2014,2015).

3.6.2.1. Feature expression of [SCAL] and [ADD] in English and Persian

In this subsection, I will describe the strategies used in English and Persian for the expression of the features [SCAL] and [ADD] in contexts that satisfy the scalar and additive presuppositions conventionally associated with uses of *even* in English based on the means of feature expression as proposed by Cho and Slabakova (2014, 2015). This characterization (as summarized in table 1 below) will be used in the rest of the chapter to describe the learning tasks of the L2 learners and eventually to make concrete predictions for the experimental studies in this thesis.

i. [SCAL] in English is expressed through dedicated morphology; overtly. I will also assume that this feature is directly expressed by the lexical item *even* because expression of unlikelihood (surprise or unexpectedness) is the primary function of this particle.

ii. [ADD] in English is constrained by word order. When in prenominal position, [ADD] is morphologically encoded in *even*. Therefore, the expression of this feature is covert. In addition, since the primary function of *even* is not the expression of additivity, I assume that [ADD] is indirectly encoded in *even*.

iii. [SCAL] in Persian is expressed overtly and directly by the lexical item *hatta*.

iv. [ADD] in Persian is expressed overtly and directly by the lexical item *ham*.

Table (1). Expression of [SCAL] and [ADD] in scalar additive contexts in English and Persian

	English	Persian
[SCAL]	overtly, directly	overtly, directly
[ADD]	covertly, indirectly	overtly, directly

Based on the characterization above, the next subsection will describe the learning tasks of the L2 learners in this study.

3.6.2.2. L2 learners' learning tasks and predictions:

L1 Persian L2 learners of English

To begin, I would like to point out that L1 Persian speakers of English learn, in classrooms and through dictionaries and word references, that *even* is the equivalent of their native language *hatta*. Therefore, the assumption made here about their initial state is that L2 learners of English start out by assuming their L1 feature set for L2 *even*. In addition, they learn pretty early on in classrooms that *too* is the equivalent of their native *ham*.

As L2 learners of English, Persian speakers would start out by transferring their L1 feature representations. Therefore, their initial state would involve the following representations:

[SCAL] is expressed overtly and directly in the L1 (Persian).

[ADD] is expressed overtly and directly in the L1 (Persian).

As for the mapping stage, they start by probing into the L2 input, looking for the same/closest configurations to map their L1 representations onto. Note that the corresponding features in scalar additive contexts are expressed in the L2 (English) in the following ways:

[SCAL] is expressed overtly and directly in the L2 (English).

[ADD] is expressed covertly and indirectly in the L2 (English).

The task predicted for the mapping stage would therefore be to map *hatta* onto *even*. This task should not be difficult since the L2 learners assume the same semantics for both operators. Therefore, one would expect that the Persian L2 learner of English would treat prenominal and postnominal *even* in English both as expressions of [SCAL] only, with no specification for [ADD]. Besides that, since the syntactic position of *hatta* is irrelevant to its semantic contribution in their L1, these learners are predicted to treat *even* the same way; *even* would not be encoding [ADD] in either syntactic position.

Additionally, since they learn the English additive operator *too* independently, and presumably easily and early (since it has the same feature specification as the L1 *ham* [ADD]), one prediction is that at the mapping stage, learners would transfer the L1 overt and direct expression of [ADD], *ham*, and accept the L2 additive operator in combination with *even* in contexts where *hatta-ham* combinations would be used in their L1, in scalar additive contexts. Therefore, one would expect that Persian L2 learners of English would accept *even-too* combinations in English abundantly.

In more advanced stages in acquisition, L2 learners are expected to note that the L2 uses a different strategy to encode [ADD] than just using an overt and direct expression of the additive operator. Therefore, reassembly is required at this stage and some difficulty is predicted. Their task is first to unlearn or dissociate the L1 lexical item representation of [ADD], in the form of *too*, in scalar additive contexts. This I predict to be difficult because the use of *too* in additive contexts is very common both in the L1 and the L2 and unless explicitly instructed not to use it in the context of *even,* I believe it would be very difficult for an L2 learner with an L1 which does use the additive operator in the same contexts

(*hatta-ham* combinations in scalar additive contexts) to dissociate [ADD] with the additive operator and detect it elsewhere, namely, through covert and indirect encoding of it on *prenominal even*. In other words, I believe that the disassociation of the expression of [ADD] through the use of the additive operator *too* is not highly motivated, especially given that the alternative strategy to express it is not a straightforward or easy one to acquire.

Besides dissociating an L1 expression of [ADD] on the additive operator in scalar additive contexts, the L1 Persian L2 learner of English would need to learn the L2 covert and indirect way of expressing [ADD]; to learn the syntactic constraint about *even* which expresses [ADD] in prenominal syntactic position. In other words, once they unlearn the use of *too* in scalar additive contexts, they need to detect how [ADD] is expressed in the L2 input. Their task is to find a covert and indirect way to express additivity in English. In short, the task of the L2 learner in scalar additive contexts is to dissociate an overt and direct expression of features in favour of the covert and indirect L2 strategy. I predict that both processes will pose considerable difficulty in acquisition.

3.6.2.3. L2 learners' learning tasks and predictions:
L1 English L2 learners of Persian

English L2 learners of Persian learn, in classrooms and through pedagogical material, that *hatta* is the equivalent of their L1 *even*. They also learn at pretty early stages that *ham* is the equivalent of *too*. At the initial state of acquisition, the English L2 learner of Persian would transfer their L1 feature representations in scalar additive contexts as summarized below.

[SCAL] is expressed overtly and directly in the L1 (English).

[ADD] is expressed covertly and indirectly in the L1 (English).

At the mapping stage, they would look for the same or the most similar feature representations in the L2 data where the corresponding features in scalar additive contexts are represented in the following way:

[SCAL] is expressed overtly and directly in the L2 (Persian).

[ADD] is expressed overtly and directly in the L2 (Persian).

As for [SCAL], detecting that the L2 *hatta* has the same feature representation as the L1 *even* should not pose great difficulty to the L2 learners. It is predicted also that at the mapping stage, L2 learners would transfer their knowledge about conditions under which [ADD] is expressed in English as well, resulting in the overapplication of the syntactic constraint on *even* onto Persian *hatta*; meaning that in additive contexts, they should prefer prenominal instances of *hatta* and, in non-additive contexts, they are predicted to reject the use of prenominal *hatta;* the postnominal position for *hatta* should be the preferred syntactic position in non-additive contexts.

On the other hand, at the mapping stage, L2 learners of Persian should not have difficulty learning the additive particle L2 *ham*. This particle is predicted to be easily acquirable independently since it corresponds to their L1 *too* and is abundant in the L2 input. Therefore, a one-to-one mapping is predicted at this stage. However, assuming that the L2 learners at this stage transfer the L1 covert and indirect representation of *even* and are predicted to use it in the L2, I predict that the L2 learners, at this stage, will not be able

to note that the L2 uses the additive operator in combination with *hatta* to express [ADD] in scalar additive contexts. In other words, the expression of [ADD] through *ham* in scalar additive contexts in combination with *hatta* is not motivated at this stage because they use the L1 strategy in such contexts. Overall, one could expect that transferring the L1 syntactic constraint on the use of *even*, the L2 learners at the mapping stage would fail to note that the L2 uses *ham* to express [ADD] in combination with *hatta* in scalar additive contexts.

At more advanced stages, L2 learners will have been exposed to ample L2 input indicating that [ADD] is expressed differently in the L2; that it is encoded overtly and directly through the insertion of the additive operator *ham* in combination with *hatta*. Facing the contrast between the L1 and the L2 means of expressing [ADD], reassembly is required. I predict that at this stage, the L2 learners should be able to notice that *hatta-ham* combinations are widely used in scalar additive contexts in the L2 based on positive evidence. Given that they have already acquired the additive operator independently, I predict that in scalar additive contexts they would legitimately wonder why *ham* is used in addition to *hatta* which in their mind expresses [ADD], as per their L1 representation for prenominal *even*. This should strike them as redundant. Having noticed the redundancy in the combination above, the L2 learners should resort to restructuring the specifications for *hatta*, which at this stage still encodes [ADD] for them. Additionally, they should notice in the L2 input that both prenominal and postnominal positions of *hatta* are fine in both additive and non-additive contexts; that their L1 syntactic condition on the use of *even* does not hold in the L2. Compatibility of the use of *hatta* in non-additive contexts should convey to the L2 learners that this particle does not encode an additive component in its

semantics. Therefore, at advanced stages of acquisition, the L2 learners are predicted to have all the tools and information for reconfiguring into the L2 representations and acquiring how [ADD] is expressed in the L2. I predict that the L1 English L2 learners of Persian should be able to successfully reassemble [ADD] into the target semantic encoding of [ADD] at later stages in acquisition. They are expected to accept *hatta-ham* combinations in additive contexts, reject them in non-additive contexts, and accept *hatta* at least equally in both additive and non-additive contexts.

3.7. Conclusion

In this chapter, I reviewed the SLA theory adopted in the present research, the FRH (Lardiere 2005 and subsequent work). I started by laying out some background from which the FRH originated. Within the Minimalist Framework (Chomsky 1995), Lardiere proposed the FRH which is a theory that emphasizes the role of L1 transfer in second language acquisition. I presented the principles and assumptions put forth by this theory and further reviewed research from the literature that has looked particularly at the second acquisition of semantic features within Lardiere's model. This literature presented empirical research focusing on the 'reassembly' stage of the FRH and introduced a number of crucial factors to consider in investigating questions about the learning tasks in L2 acquisition. This domain of research is the main focus of the experiments reported in this dissertation. The chapter concluded by describing the application of the FRH in the present study: the theoretical assumptions about *even*, *hatta*, and *ham* were integrated into the operational feature classifications of Cho and Slabakova (2014, 2015) and the learning tasks and predictions for the two learner groups in this study, Persian L2 learners of English and English L2

learners of Persian, were defined within the premises of the FRH. The next chapter will explore the experimental studies that were conducted in order to explore the L2 acquisition of the semantic representations of the focus-sensitive presupposition triggers in English and Persian.

CHAPTER 4

EXPERIMENTAL STUDIES AND RESULTS

4.1. Introduction

In this chapter, I will describe two experimental studies that were conducted to explore the applications of the FRH in the L2 acquisition of the semantic representations associated with focus-sensitive presupposition triggers in English and Persian. More specifically, the studies here set out to investigate the L2 acquisition of the ways through which the semantic components associated with *even*, *hatta*, and *ham* are expressed in the two languages of interest. The studies involved five experimental tasks in each language (same tasks in both studies) that aimed at investigating the L2 acquisition of the above particles in two different learning directions: Persian L2 learners of English and English L2 learners of Persian. In what follows, first, I will spell out the research questions in relation to the L2 acquisition of focus-sensitive presupposition triggers within the FRH framework. Then, I will present details about the experimental studies including the participants, experimental design, data collection, and methodology for data analysis. The experimental results and discussion will conclude the chapter.

To remind the reader, the present thesis seeks to establish if and how the two stages in L2 acquisition, 'mapping' and 'feature reassembly', as proposed within the FRH, can describe and explain the acquisition of semantic representations of focus-sensitive presupposition triggers in L2 English and Persian.

As established in chapter 2, *hatta* is a focus-sensitive item in Persian that triggers a scalar presupposition and *ham* is an additive operator which triggers an additive presupposition. In combination, these two operators compose and give rise to both a scalar and an additive presupposition. Recall that in chapter 3, the expression of [SCAL] and [ADD] in Persian were defined as follows:

v. [SCAL] is expressed overtly and directly by the lexical item *hatta*.

vi. [ADD] is expressed overtly and directly by the lexical item *ham*.

These presuppositions are triggered differently in English; *even* is a scalar item which depending on the syntactic position it takes, may or may not trigger an additive presupposition. Crucially, if *even* is in prenominal position, it always triggers an additive presupposition. In other syntactic positions, e.g., postnominal, adverbial, or sentence-final, however, *even* does not lexically encode additivity and is only scalar. This does not block *even* from being compatible with additive contexts, nonetheless. Therefore, I assume that the expression of [SCAL] and [ADD] in English are as follows:

vii. [SCAL] is expressed directly and overtly through dedicated morphology by *even*.

viii.   [ADD] is supplied by syntactic context; hence covertly expressed. In addition, since

the primary function of *even* is not the expression of additivity, I assume that [ADD]

is indirectly encoded in *even*.

The table below summarizes the comparison between feature expressions for [SCAL] and

[ADD] in scalar additive contexts across English and Persian.

Table (4.1). Expression of [SCAL] and [ADD] in scalar additive contexts in English and Persian

	English	Persian
[SCAL]	overtly, directly	overtly, directly
[ADD]	covertly, indirectly	overtly, directly

In the next subsection, I will outline the research questions of this study. After that, the

learning tasks of the L2 learner groups will be reviewed and some predictions will be

formulated within the FRH.

4.2. Research goals

The goals of the present research are two-fold. Below, I formulate these goals by discussing

the following issues:

1. ***The expression of the semantic components associated with 'even', [SCAL] and***
   [ADD], in English and Persian.

From a theoretical perspective, this study aims to empirically test theoretical proposals

about the semantics of *even* (Wagner 2013, 215) in English and *hatta* and *ham* (as

proposed in the present research) in Persian. In particular, the goal is to identify the

presuppositional contribution of these particles in both languages as the L1s here and

establish a baseline for evaluation of L2 performance. The relevant research question will therefore be formulated as how [SCAL] and [ADD] are expressed in English and Persian.

Table (4.1) summarizes the theoretical assumptions of the present study with respect to this research question. Note that the controversial component of *even* which has raised quite substantial debates in the literature is [ADD]. Therefore, the presence and expression of this semantic component will be the main focus of the experimental studies in this thesis. [SCAL] will be assumed to be overtly and directly encoded in *even* and *hatta* throughout the experimental design, results, and analyses for both languages. The expression of [ADD] in English is licensed by syntactic context, as proposed by Wagner (2013, 2915): It is only linguistically encoded when *even* occurs in prenominal syntactic position. This, in Cho and Slabakova's (2014, 2015) description of feature expressions, would mean that this component (semantic feature) is encoded covertly and indirectly. In Persian, [ADD] is encoded overtly and directly by dedicated morphology. A lexical item bearing this feature (triggering the additive presupposition) is inserted to express this presupposition.

2. *Sources of difficulty in L2 acquisition*

From an L2 acquisition perspective, the present study focuses on a number of central questions about the processes of feature mapping and reassembly by investigating the L2 acquisition of focus-sensitive presupposition triggers in English and Persian. Some of the main premises of the theory as proposed by Lardiere (2005 and subsequent work) and implemented by Cho and Slabakova (2014, 2015) will be addressed, as sketched below.

It has been noted that the process of L2 acquisition is hindered when L2 learners have to figure out feature representation dissimilarities between the L1 and the L2 configurations. Additionally, feature reassembly is predicted to be successful if L2 learners have been exposed to sufficient positive input. In principle, therefore, advanced L2 learners should be able to overcome such difficulty and successfully reassemble into L2 configurations. If feature reassembly is not successful, however, even in highly proficient L2 learners, then the question is what is it at the heart of the reassembly process which makes the acquisition task so arduous? Is it the nature of the feature that makes the acquisition task hard? Is it the means of the feature expression which is hard to integrate into the acquisition task? Is it the L1 lingering effects that (continue to) obstruct feature reassembly? The experimental studies reported in this chapter will address these questions specifically.

a. *Overt and direct features in L2*

I will set out to explore the L2 acquisition of overt and direct features by addressing the following questions: Are English L2 learners of Persian able to acquire the L2 direct and overt expression of ADD by overcoming their L1 covert and indirect expression of this feature?

b. *Covert and indirect features in L2*

The L2 acquisition of covert and indirect features will be another issue that the present research will investigate by addressing the following question: Are Persian L2 learners of English able to acquire the covert and indirect expression of ADD in English? How difficult is it for L2 learners to overcome their L1 direct and overt feature encoding in favour of the

acquisition of covert and indirect expression of a particular feature? Are they ever able to

successfully reassemble into the L2 configurations?

4.3. Experimental studies

4.3.1. Participants

The participants in the experimental studies consisted of two groups: L1 Persian L2

learners of English who served as both the Persian NS control group (N=42) and the

English L2 learner group (N=42). The second group consisted of 40 NSs of English

who served as the English NS control group (N=40). Out of these 40 participants, 10 were

L2 learners of Persian who served as the Persian L2 learner group (N=10)[1]. Table (4.2)

below summarizes the background information about both groups.

Table (4.2). Summary of background information of the participants

	Number (total)	Gender (M:male, F:female)	Number of L2 learners in this group	Group (Int:intermediate, Adv:advanced, near-native)	Mean age at the time of testing	Mean years of having learned the L2	Use of L2 per week (hours)
Persian NSs	42	M: 22 F: 20	42	Int: 21, Adv: 21	~27.64 (range: 20-45)	~9.8	~16.9
English NSs	40	M:12 F:27	10	Int: 4, Adv: 6	~27.56 (range: 18-69)	~8	~16.6

4.3.1.1. L1 Persian L2 learners of English

Forty two Persian L2 learners of English were tested in Iran where contemporary Persian

is the official language. This group was tested both as the Persian NS control group and the

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[1]Note that the results from the 40 NSs of English (out of which only a subset of 10 people were L2 learners of Persian) were analyzed using mixed-effects linear regression models which handle unequal group sizes.

English L2 group. The decision to have the same speakers for both the NS control group and the L2 group was made because testing the same participants across the control and experimental groups would allow for a more precise investigation of the questions about what and how individuals transfer from their L1 and how this affects the acquisition of comparable/ equivalent L2 representations and/or structures. Most participants had only Persian as their L1 (N=41; one person was a bilingual of Persian and Kurdish). This demographic profile for participants in a study on the FRH in L2 acquisition is ideal because transfer from other L1 sources and mastery of different acquisition mechanism(s) are controlled for. Most of them knew only English as a second language (N=32), others knew other languages with intermediate as the highest proficiency level reported. The participants in this study were either learners of English at language institutes or graduate students of TEFL (teaching English as a foreign language) and English literature or teachers of English at a number of language institutes. 90.5% of the participants had higher than university education, 4.76% had college level education, and 4.76% had high school diplomas. None of the participants had spent time (one month or more) in any country where English is the language of communication. All participants received remuneration for their participation.

As for their proficiency level in English, participants were asked first to self-rate their proficiency in an online language background questionnaire. They also took an online proficiency test comprised of a set of forty multiple-choice questions adopted from the grammar section of the Michigan Test of English Language Proficiency (appendix D) followed by a phone/skype interview with the experimenter. They were classified in two groups: intermediate and advanced/near-native. True beginner learners were not included

in the study because the tasks involved required a minimum of intermediate reading and listening ability in English.

4.3.1.2. L1 English L2 learners of Persian

For the second L2 learning direction, L1 English L2 learners of Persian, this study faced the limitation of a smaller number of participants. Out of the 40 NSs of English who were recruited, ten were L2 learners of Persian (who were located in different English speaking countries (the U.S., the U.K., and Canada). Their only first language was English. In most cases (90%), these ten L2 learners of Persian knew some other L2(s) besides Persian but at a lower level of proficiency (only one participant knew another language, Spanish, at an advanced level). 95% of the participants had higher than university education and 5% had college level education. 60% of the L2 learners of Persian had spent time (one month or more) in a country where Persian is the language of communication. For the 30 non-L2 learner NSs of English (located in the U.S. and Canada), 94% had university education and 6% had college level education. 34% of them were monolinguals of English, 50% knew one or two languages at a beginner/intermediate level, and 16% knew a second language at an advanced level. All participants received remuneration for their participation.

The L2 learners of Persian completed an online proficiency test of Persian, adapted from the McGill Islamic Institute Persian Placement Test[2]. The test included fill-in-the-blank, sentence-making tasks, and a short close test. Based on the scores obtained, participants were then divided into two groups, intermediate (N=4) and advanced (N=6).

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[2] I would like to express my gratitude to the McGill Islamic Institute for allowing me to access the McGill Islamic Institute Persian Placement Test and use some sections of it for the Persian proficiency test given to the L2 learners of Persian in the present study. Due to a non-disclosure agreement, the test is not revealed in the present thesis.

4.3.2. Methodology and procedure

As already indicated, the experiments in this research were undertaken by two groups: Persian native speakers (who had English as their L2) and English native speakers (10 of whom had Persian as their L2). Participants filled out online personal and language background information forms through SurveyGizmo and the L2 learners took L2 proficiency tests online.

Each participant was scheduled to do five online experiments at five different sessions which were scheduled to be a minimum of 24 hours distant from one another (Note: The English native speaker group who were not learning L2 Persian only did 3 experiments on their L1). Each experiment was expected to take from twenty to thirty minutes on average. Occasionally, poor internet quality increased this time for participants. The links to the webpage for the experiments were sent to the participants in the morning of the days they had specified and they were asked to do the experiments in a quiet environment of their choice.

4.3.2.1. Tasks

The study consisted of felicity judgment tasks. The test items were randomized and presented to the participants in both written and audio forms. Each test item comprised of a short context that the participants were asked to read carefully first. After they finished reading the story and making sure they were familiar with it, the participants had to press a button to play the recording of that short story followed by an 'additional remark' which appeared on the screen. The rationale behind creating audio stimuli was to control for any

prosodic effects that could potentially result in a difference in interpretation given that a variation in prosody can sometimes trigger a specific presupposition in both languages of interest. The goal of this study was to investigate the acquisition of *lexical* presupposition triggers regardless of effects of prosody. The additional remark was either a full sentence or a sentence fragment depending on the experiment profile scheduled for them on each particular day. The additional remark appeared on the screen in written form as the speaker in the audio reached the end of the context and appeared simultaneously with the recording of it. This was to ensure a natural flow from the end of the context to the additional remark. Once the audio-visual presentation of the test item was finished, a Likert scale appeared on the screen which asked the participants to rate the naturalness of the additional remark given the story that preceded it. The scale was from 1 to 7, where 1 was to indicate a *completely unnatural* additional remark and 7 indicated *completely natural*. They were also given the option of choosing *I don't know* if they did not have any intuition about the naturalness of the additional remark. Once they hit a button on the scale, they were directed to the next item and were not able to go back to a previous item or change their response. A screen shot of a test item from the study is shown in the figure below.

Figure (4.1). Test item from the English experiment.
condition: *fragment type, non-additive context, prenominal even, NoToo*

The participants were additionally given a 'word list' to refer to in case of unfamiliarity with any words throughout the experiments. They could not skip test items without providing an answer (which could be *I don't know* if they decided they had no intuition). Due to internet interruptions, the experiments were designed in such a way that any item which was frozen on the screen (considered as a defected item) would be skipped after 5 minutes of inactivity and the next item would appear immediately. Some data was lost

through this add-on feature to the experiment, but this helped ensure that the participants would finish the experiments. Participants were given the option of calling or skyping with the researcher in case of any questions and/or problems related to the experiments. Instructions were presented to them in English and Persian to make sure that they were completely comfortable with the tasks that they had to complete.

4.3.2.2. Design

The factors manipulated in the design of the experiments in this study are the following.

(1) *L1*:   *Persian* or *English*

(2) *type*:   *fragment* or *non-fragment*

(3) *group*:   *intermediate* or *advanced*

(4) *context*:   *additive* or *non-additive*

(5) *presenceToo*:   *Too* or *NoToo*

(6) *syntax*:   *prenominal* or *postnominal* or *VP* (only for the English non-fragment experiment)

First was *L1*: participants in this study were either native speakers of *Persian* or *English.*

Second was the experiment *type* variable: *fragment* experiment or *non-fragment.* This refers to whether the additional remark for each story was in the form of a sentence fragment or a full sentence. For instance, the additional remark in the example in figure (4.1) was either in the form of a fragment 'Even an A+' or non-fragment 'I got even an A+'. Note that in all cases in the experiments here, the focused NP is in object position.

Next, *group* was included with two levels based on proficiency level in the corresponding L2: *intermediate* and *advanced*.

In designing the context stories, 9 different themes (for example, *'exam grade'*) were considered, and two stories were written for each theme (thus 18 contexts in total, see Appendix B for test items): one which was compatible with an additive presupposition in the target sentence and one which was incompatible with an additive presupposition. For instance, for the '*exam grade*' theme of the story in figure (stimulus shown in figure 4.1, which implied a non-additive context). There was also an additive version, as follows: "*I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades*". The stories were the same across all experiments in this study and were translated from English to Persian with very slight modifications, where necessary. The contexts ensured that the presence of the scalar presupposition (scalarity [SCAL]) was kept constant across all test items; all contexts were constructed with the assumption that the prejacent of the presupposition trigger is the least likely/most unexpected proposition in the set of pertinent alternative propositions. This guaranteed that the use of *hatta* and *even* was licensed throughout the study. In the examples mentioned above, for instance, the fact that the final exam was extremely difficult implies that an A+ is a very unlikely grade to get, perhaps the least likely one. Additionally, as discussed above, the contexts were constructed in such a way that the additive presupposition was either satisfied or not; hence the two levels *additive* (where truth of an alternative presupposition is fine) and *non-additive* (where truth of an alternative presupposition would create a presupposition clash). The context above, for instance, ensures that only one grade could have been obtained, given the speaker took only one course (and that the grade was obtained in the final exam), hence uniqueness- an additive presupposition should lead to infelicity. After reading the context and making sure

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they were familiar with it, the participants had to click on the audio button to listen to the recorded version of the story which was then followed by an additional remark.

The next variable was based on the lexical manipulations of interest in the additional remarks: First, presence or absence of the additive operators *too* and *ham* in English and Persian (*presenceToo*). Two levels were associated with this factor: *Too* and *NoToo*. The *Too* condition was associated with strings where an additive operator was used in combination with *even* or *hatta*. For instance, the additional remark for the example in figure (1) was 'Even an A+, too' or 'I got even an A+, too' in the non-fragment version. The *NoToo* condition included only *even* or *hatta*; e.g. 'Even an A+' or 'I got even an A+'.

Lastly, the *syntax* of focus association was a factor of interest that would in principle have three levels: *prenominal* placement, *postnominal* placement, and *VP* placement (in the full sentence version of the experiments). Note that Persian is a verb-final language which does not standardly allow VP-even to focus associate with an internal NP[3], which is the focus of the present study. On the other hand, English VP-even does allow VP-internal focus association. Therefore, the *VP* condition was removed from the Persian experiment. As such, the Persian non-fragment experiment had only two levels for *syntax*: *prenominal* and *postnominal*. The English non-fragment experiment, however, had a third level for *syntax*: *VP* (VP-attachment vs. DP-attachment). As an example for English non-fragments, the additional remark for the example in figure (4.1) was either 'I got even an A+' with prenominal placement of *even* or 'I got an A+, even' where *even* is in postnominal position or 'I even got an A+' where *even* is in VP position.

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[3] It should be noted that backwards association in VP position is possible with a VP-internal NP.

In summary, initially, four experiments were designed for this study based on the manipulations explained above:

(P1)   Persian fragments
(P2)   Persian non-fragments
(E1)   English fragments
(E2)   English non-fragments

Experiments P1, E1, and P2 included 8 experimental conditions: *context*, *presenceToo*, *syntax* (only *prenominal* and *postnominal*). There were 72 items in each experiment (2*2*2 conditions * 9 stories). Experiment E2 (English non-fragments) had a three-level *syntax* factor (*prenominal*, *postnominal*, and *VP*) and included 108 items. This would have made a very long task for the participants; therefore, this experiment was split up into two, so that experiment E2 would include 54 *NoToo* items and experiment E3 would include the other 54 *Too* items[4]. The final design of the study included five experiments:

(P1)   Persian fragments
(P2)   Persian non-fragments
(E1)   English fragments
(E2)   English non-fragments *NoToo*
(E3)   English non-fragments *Too*

The order of the experiments was randomized to control for any bias effects related to the order of the experiments. Since each experimental group, intermediate and advanced, was divided to three sub-groups (IntA, IntB, IntC, AdvA, AdvB, AdvC), three different orders were considered for the administration of the experiments:

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[4] Analysis of the data from these two experiments, however, was conducted jointly since the same participants did the two experiments (in two different sessions).

Order A: E1, P1, E2, P2, E3

Order B: P1. E1, E3, P2, E2

Order C: E3, P2, E1, P1, E2

4.4. Experimental results

In this section, results of the felicity judgement tasks will be presented. In what follows, first the statistical models used in the analyses will be described. Next, I will present the results of the English experiments: Performance of the NSs of English will be compared to the L2 learners of English (whose L1 is Persian). Subsequently, results from the Persian experiments will be presented which will show how NSs as well as L1 English L2 learners of Persian perform on the tasks.

4.4.1. Statistical models

Results of the experiments in this study were analyzed using mixed-effects linear regression models, fitted using the *lmer* function from the *lme4* package (Douglas, Martin, Ben & Steve 2015) in R. The participants' responses were modelled as a function of a number of fixed variables. The fixed effects are *type*, *language, context*, *syntax, presenceToo,* and proficiency *group.* Three-way interactions between the fixed effects related to my research questions were also added which will be introduced and discussed in the relevant results sections. It should be pointed out that since four-way interactions are hard to interpret, I will sometimes investigate subsets of the data, according to the relevant variable(s) in question, and consider two or three-way interactions in my analyses only. The models also included *by-item* and *by-participant* random intercepts for the fixed effects

to account for variability in the participants and items beyond the effects of the variables included in the models.

In the following, I will report the results of the statistical analyses using tables in which each fixed effect coefficient is shown with its associated standard error, degrees of freedom, test statistic, and significance, calculated using the Satterthwaite approximation as implemented in the *lmerTest* package (Kuznetsova, Brockhoff & Christensen 2015). All effects and interactions relevant to the research questions of interest are set in bold in the tables summarizing statistical results. Furthermore, plots will be provided and used to exploratorily describe the distributions of the data. All plots are pooled across speakers.

Three points are to be added before turning to the results: First, as discussed in the experimental design, the English non-fragment experiment was administered in two sessions due to the high number of test items which was a result of including a VP syntax level to the experiment besides *prenominal* and *postnominal*. Results from E2 (English *non-fragment NoToo* experiment) and E3 (English *non-fragment Too* experiment) are analyzed jointly here under English *non-fragment* experiment *type*. Second, since the research questions in this study concern the syntax of *even* and *hatta* with respect to the NP that they focus-associate with, the responses to the *VP* conditions are excluded from the statistical analyses. I believe that VP-association raises various questions which are not relevant to the present research and leave the analysis of the VP-data for future research. Third, as mentioned in the experimental design section, participants were given the option of choosing 'I don't know', if they had no intuition about felicity of target remarks. 'I don't know' responses were coded as null and were excluded from the statistical analyses. In

addition, defected test items (where the stimuli did not appear on the screen due to some webpage glitch or internet speed issue), which were automatically skipped as the experiments proceeded, were not included in the analyses, either.

4.4.2. Results and analysis

The first question to address in the present research is how NSs of the each of the target languages (English and Persian) perform with respect to the expression of the semantic feature [ADD]. Note that the presuppositional contribution of the focus-sensitive presupposition triggers in this study are operationalized in terms of the semantic features [SCAL] and [ADD]. In addition, the research questions of this study concern expression of [ADD] in the L2; i,e. how and whether L2 learners are able to acquire the expression/encoding of this features in their L2. In FRH terms, the question will be whether L2 learners are able to reassemble/reconfigure their L1 feature representations into those of the L2. Note again that in the experiments here, [SCAL] is always satisfied in the given contexts and as such all experimental items include *even* and *hatta.*

The structure of this section is as follows. First, I will present the results and discussion for English: NS results as well as L2 learner results (from L1Persian L2 learners of English) followed by comparison of their performance. Then I will proceed to the Persian data: Persian NS results as well as L2 learner results (from L1 English L2 learners of Persian) besides comparison of their results. Summary and discussion of the results will conclude the chapter.

4.4.2.1. Study (1): English

This section presents the results, analysis, as well as comparison of the performance of NSs and L2 learners of English.

4.4.2.1.1. English NSs: results

Figure (4.2) illustrates the results of the felicity judgment tasks for the English NSs across the two experiment *types*: *fragments* and *non-fragments*. The two columns on the left illustrate the data from the *fragment* experiments and the two on the right show the data from the *non-fragment* experiments. For each experiment *type,* the data is further facetted by *syntax* (*prenominal even* on the left and *postnominal even* on the right), *context* (the contexts where additivity is satisfied are shown to the left of the *non-additive* contexts), and *presenceToo* (the presence vs. absence of *too*, the English additive operator; top row of the plot illustrates the *NoToo* condition where *even* used alone and the bottom row plots the data where *even-too* combinations were used). Table (4.3) summarizes the results of the mixed-effects linear regression model fitted with fixed effects for *type, syntax, context, presenceToo,* and their interactions used to analyze the data from the English NSs.
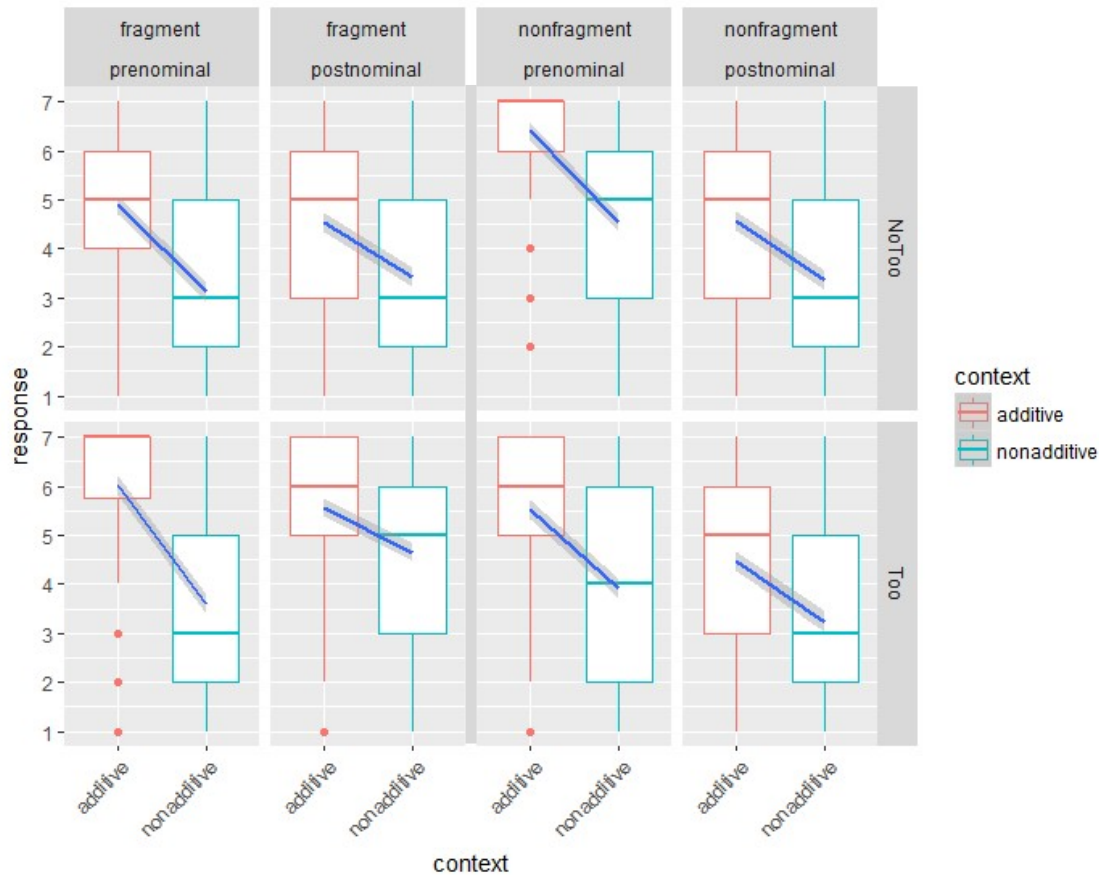
Figure (4.2). Felicity rating for the NSs of English; by *type, syntax, context, presenceToo*

Table (4.3). Summary of effects of *syntax, context, presenceToo, type,* and their interactions
data: felicity rating from English NSs

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	0.88645	0.06445	4888.00000	13.753	< 2e-16	***
context	-1.66405	0.05017	4880.00000	-33.171	< 2e-16	***
type	0.33845	0.04986	4893.00000	6.789	1.27e-11	***
presenceToo	0.07153	0.05037	4893.00000	1.420	0.15564	
syntax:context	-1.04209	0.12721	4880.00000	-8.192	4.44e-16	***
syntax:type	1.85603	0.12594	4882.00000	14.738	< 2e-16	***
context:type	0.17366	0.09903	4880.00000	1.754	0.07955	.
context:presenceToo	-0.10260	0.10008	4880.00000	-1.025	0.30532	
type:presenceToo	-1.44069	0.09132	4892.00000	-15.777	< 2e-16	***
syntax:presenceToo	-0.64673	0.12591	4882.00000	-5.136	2.91e-07	***
syntax:context:type	0.72539	0.25153	4880.00000	2.884	0.00394	**
context:type:presenceToo	0.29072	0.18159	4880.00000	1.601	0.10944	
syntax:context:presenceToo	-0.40804	0.25149	4880.00000	-1.622	0.10477	

As the plot illustrates, there is a main effect of *syntax* suggesting that overall, NSs prefer the use of *even* in *prenominal* position rather than *postnominal*. This is not surprising since *even* does in most uses appear prenominally. In addition, the results indicate a main effect of *context* suggesting that NSs prefer the presence of *even* in *additive* contexts rather than *non-additive* contexts which are admittedly much less frequent in general. The results do not show a main effect for *presenceToo*. Consistent with reported overall intuition suggesting that NSs of English do not like to use *too* in combination with *even* and based on the results from the pilot experiment (as reported in chapter 2), it was expected to see an overall dislike for the *too* condition where *even* is used in combination with *too*. This prediction was not borne out, however. Furthermore, the three-way interaction between *presenceToo, context,* and *type* is not significant, either. This result is surprising because one would plausibly expect that the additivity effect (which, I assume to be signalled by a significant difference between the ratings for the *additive* and *non-additive* contexts) would be significantly larger if an additive operator is present in the structure. Put differently, the presence of the additive operator should in principle be highly accepted in *additive* contexts and largely dispreferred in *non-additive* contexts yielding a large additivity effect. The NS data here, however, suggests that the additivity effect is perceived independently of the presence of *too* in English, a result which is indeed true of both *fragment* and *non-fragment* experiment *type*s. The question now is what strategy English uses to signal the additivity effect; what do NSs of English do to encode [Add] in scalar additive contexts?

4.4.2.1.1.1. English NSs: Expression of [ADD]

To answer this question, I will briefly review the predictions based on Wagner (2013, 2015) and as confirmed by the experimental results obtained in the pilot experiment reported in chapter 2 (plot repeated in figure 4.3 below, see section 2.2.4 for more details and statistical results). The results of this experiment, as figure (4.3) illustrates, indicate a clear contrast between *prenominal* and *postnominal* positions of *even* in terms of the additivity effect. The additivity effect is significantly larger in the *prenominal* condition suggesting that *even* in this position has a semantic component which is not compatible with the non-additivity of the context, hence, high dispreference for *prenominal even* in *non-additive* contexts. This implies that if using *even* is accepted in contexts that do not satisfy the additive presupposition, it cannot have an additive component in its semantics (cannot be in *prenominal* position, in other words). As the plot in 4.3 illustrates, while *prenominal even* is strongly dispreferred in *non-additive* contexts, *postnominal even* is highly accepted in this condition suggesting that in this syntactic position, *even* does not encode [ADD]. *Postnominal even* is also highly accepted in *additive* contexts in the results here which is not unexpected under the view that, in principle, there is nothing that blocks *postnominal even* from appearing in *additive* contexts. *Postnominal even* does not linguistically encode [ADD] and as such, its use is compatible with the contexts that satisfy the additive presupposition.
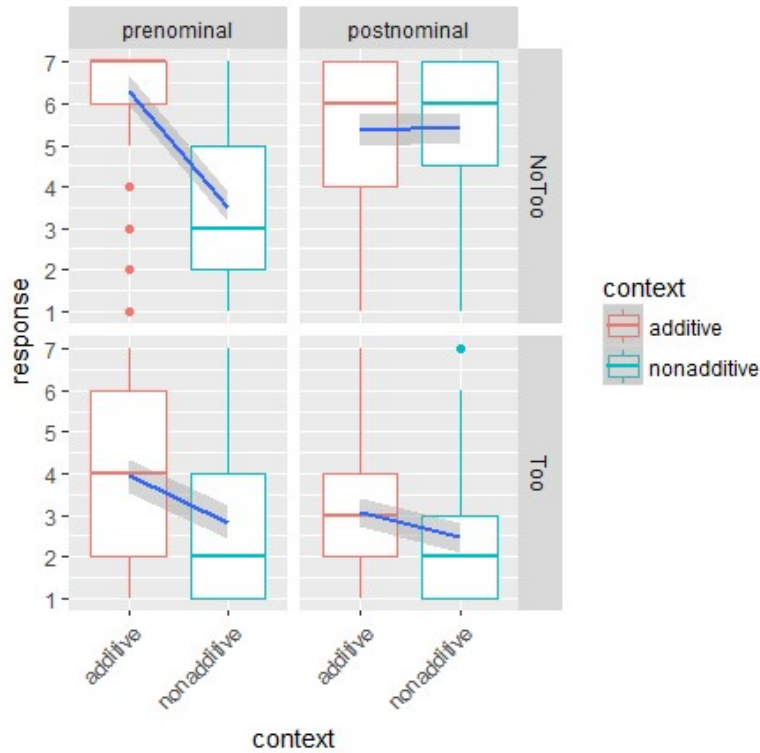
Figure (4.3). English NSs. Results of the pilot experiment on *fragment* responses; by *syntax, context, preesenceToo*

I will now turn back into the question of how [ADD] is encoded by the NSs of English in the current experimental studies, as shown in figure (4.2). Although, as indicated by the direction of the slopes in all of the plots in figure (4.2), *even* seems to be preferred with an *additive* reading in both *prenominal* and *postnominal* positions (main effect of *context*), the statistical results as reported in table (4.3) show that the additivity effect is significantly larger in the *prenominal* syntactic position; hence, the significant three-way interaction between *syntax, context,* and *type* (*fragment* vs. *non-fragment*). Furthermore, this result suggests that the interaction between *syntax* and *context* is even larger in the *fragment* version of the experiments. Therefore, the additivity effect is more clearly perceived in *prenominal even* in the *fragment* version of the experiments. Recall that the pilot

experiment reported above consisted of *fragment* responses only. This decision was made due to the reported NS intuition which suggested a crisper contrast between prenominal and postnominal *even* in terms of the additive presupposition in fragments. The current results indicate that this intuition is perhaps on the right track and that there is possibly something about *fragment* constructions that lead to the additive presupposition of *even* being more clearly perceived when it occurs in *prenominal* position. This is a stipulation here and requires further investigation which is beyond the goals of the present study. The crucial finding here is that the significant interaction between *syntax* and *context* indicates a larger additivity effect in the *prenominal* condition. This would mean that *prenominal even* encodes a component in its semantics ([ADD]) which makes its use highly compatible with *additive* and largely incompatible with *non-additive* contexts leading to a larger additivity effect than the case of *postnominal even* which is used in both *additive* and *non-additive* contexts.

Note, furthermore, that another prediction based on Wagner (2013, 2015) and the experimental results from the pilot experiment reported in chapter 2 (plot repeated in figure 4.3), would be that in *non-additive* contexts, *postnominal even* would be preferred over *prenominal* since it does not have the [ADD] in its semantics. In other words, one would expect *prenominal even* to be highly rejected in *non-additive* contexts, as opposed to *postnominal*, because *prenominal even* presumably encodes [ADD] in its meaning which should block it from appearing in *non-additive* contexts, while *postnominal* is predicted to not encode [ADD] at all and therefore in principle be compatible with both *additive* and *non-additive* contexts. To test this, the *non-additive* subset of the data was analyzed separately. This subset is plotted in figure (4.4) where the data is facetted by experiment

type (*fragment* vs. *non-fragment*), *syntax*, and *presenceToo*. This plot shows that the above

prediction is borne out only in the *fragment* version of the experiments: overall, *prenominal*

even[5] is rejected more than *postnominal* suggesting that *postnominal even* is the preferred

choice in *non-additive* contexts.
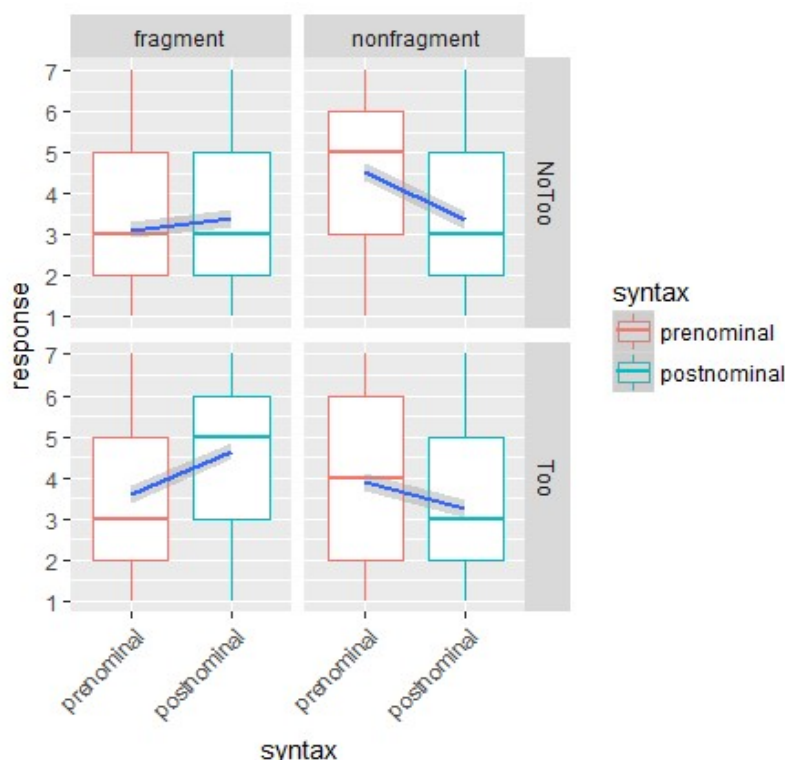
Figure (4.4). English NSs. Felicity rating for the *non-additive* subset of the data;
by *type, syntax, presenceToo*

To statistically investigate this observation, a statistical model for the *non-additive*

condition of the *fragment* version was fitted with the fixed effect for *syntax.* Table (4.4)

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[5] Note that in the *Too* condition, *postnominal even* is accepted more than *prenominal* suggesting that in *non-additive* contexts, the NP-*too-even* strings are accepted more than NP-*even* strings. For example, in the final exam grade context, where everyone gets only one grade on the final (see figure 4.1 for context), the string "An A+, too, even" is rated higher than "An A+, even". This is unexpected under the assumption that *too* is an additive operator in English and should be in conflict with non-additive context. The investigation of this finding requires follow-up experiments which I leave for future research. Important for the present research is that *prenominal even* is, as confirmed by the statistical analysis, the disprefered particle in *non-additive* contexts, both in the *NoToo* and *Too* conditions.

summarizes the results. The main effect of *syntax* here shows that *postnominal* is rated significantly higher than *prenominal* in the *fragment* version[6]. This confirms the earlier finding that *prenominal even* encodes [ADD] which is not compatible with *non-additive* contexts.

Table (4.4). Mixed-effects linear regression model with fixed effect for *syntax*;
data: *non-additive* subset of the *fragment* version of the experiments

	Estimate	Std. Error	df	t value	Pr(>|t|)
syntax	-0.9751	0.1328	1201.4000	-7.344	3.80e-13 ***

Let us now consider the *non-fragment* results for the *non-additive* subset of the data shown in figure (4.4). It is clear from the plot that *prenominal even* is favoured over *postnominal even* in this subset, which is surprising since *prenominal even* was independently shown to encode [ADD] in its meaning and its use should plausibly be incompatible with *non-additive* contexts.

To explain this unexpected finding (preference for *prenominal even* in *non-additive* contexts in *non-fragments*), I suggest that the syntax of NP-attachment for *even* in *non-fragments* plays a role in the interpretation of this particle by the speakers. In other words, I believe that an independent syntactic dislike (as reported by various English native speaker consultants) for the intervention of *even* between the verb and the object-NP in such constructions affects the processing of *even*. This will be elaborated on in more detail below.

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[6] Although this effect is not very strong, especially in the *NoToo* condition, the statistical analysis shows a main effect of *syntax* confirming Wagner's syntactic generalization. I believe future experimental follow-ups can shed further light into the reasons why the effect is not as strong as expected in the present study.

The manipulation of *syntax* in the experiments reported in this study was over object-*even*, i.e. *even* attaching to object NPs. Compare the syntactic position of *even* in the examples below.

(4.1) *Context:* I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.

[Additional remark] I got *even* an A+.   (prenominal *even* in non-fragment)

(4.2) *Context:* I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.

[Additional remark] I got an A+, *even*.   (postnominal *even* in non-fragment)

The presence of *even* in the *prenominal* position in the first sentence (a *non-fragment*) is reported by native speakers of English to be odd to begin with, regardless of additivity-related reasons. This oddness, however, is not reported if a *fragment* is used instead:

(4.3) *Context:* I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.

[Additional remark] 'Even an A+'.   (prenominal *even* in fragment)

Based on the comparison above, I conjecture that the unexpected high acceptance rate for *prenominal even* in *non-additive* contexts in the *non-fragment* version of the experiments might have to do with the weirdness of placing *even* in front of the object-NPs in such constructions (example 4.1 above). Note, however, that this position is rated high in *additive* contexts (see figure 4.2) which suggests that the speakers, despite their dislike for the placement of *even* in this position, accept it with an *additive* interpretation. In other words, they seem to compromise on the disfavoured syntactic placement of *even* by

accepting the most plausible interpretation for it (being additive). In *non-additive* contexts, though, one would expect them to reject these sentences because *prenominal even* presumably encodes [ADD] and should be disfavoured in contexts that do not satisfy the additive presupposition. This is not the case, however, and the speakers accept pre-object *even* in *non-additive* contexts, too (as figure 4.4. illustrates), even more than *postnominal even*, which was predicted to be preferred given that this particle presumably does not encode [ADD].

To explain the unexpected acceptance of *prenominal even* in *non-additive* contexts in *non-fragments*, I maintain that rather than rejecting these sentences, the speakers resort to a different strategy in order to accommodate/compensate for the syntactic dispreference described earlier: they opt for a different construal for *prenominal even*. Speakers, facing pre-object *even* (which for them has an *additive* interpretation) in *non-additive* contexts, and knowing that this particle cannot plausibly have an *additive* meaning in such contexts, construe a VP-association for this particle, instead, which would allow them to process it as *non-additive*. They process pre-object *even* in *non-additive* contexts as though it were VP-*even* because, as suggested by Wagner (2013, 2015), VP-*even* is indeed compatible with both an additive reading and a non-additive reading[7]. In short, I suggest that in *non-fragments*, speakers treat pre-object *even* in *non-additive* contexts like VP-*even* and accept it in both *additive* and *non-additive* contexts. This suggestion requires further investigation which I leave for future research. At this point, I assume that the results of the *fragment* version of the experiments are most indicative of the facts about *prenominal even*.

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[7] *even* presumably does not encode additivity in non-prenominal positions including VP position (see chapter 2 for discussion)

Another finding from the NS data in English is that the three-way interaction between *syntax, context,* and *presenceToo* does not come out significant which suggests that the presence or absence of *too* in combination with *even* does not interact with the additivity effect; *prenominal even* signals the greatest additivity effect without the presence of *too.*

In summary, results from the NSs of English indicate that the additivity effect in English is independent of the presence or absence of the additive operator *too.* In other words, it could be concluded that *too* in combination with *even* does not contribute the semantic feature [ADD]. English must, therefore, use another tool to express [ADD] in contexts that satisfy additivity in order to respect maximize presupposition. This strategy was found to be in line with the prediction made by Wagner's (2013, 2015) syntactic constraint on *even* suggesting that the additivity effect interacts with the syntactic position of *even*. The additivity effect is found to be significantly stronger when *even* is used in *prenominal* position. This significant interaction between *syntax* and *context* was shown to hold across both experiment types: *fragment* and *non-fragment* and is even stronger in the *fragment* version of the experiments. It could be concluded, consistent with Wagner, that *prenominal even* encodes a semantic component, [ADD], which makes it compatible with *additive* contexts and significantly dispreferred in *non-additive* contexts (at least in the *fragment* version of the experiments). Furthermore, it was shown (although not very strongly so and only in the *fragment* version) that *postnominal even* is the preferred particle in *non-additive* contexts. *Prenominal even* is dispreferred in such contexts due to the clash between its semantic content [ADD] and the non-additivity of the context. Although this result was only found in the *fragment* version of the experiment, I attributed

the unexpected high acceptance of *prenominal even* in *non-additive* contexts in the *non-fragment* version of the experiments to the reported dislike for *even* in pre-object position in English which results in speakers construing a different (VP) association as a compensation strategy and left the investigation of this finding for future research. I, therefore, assume that the *fragment* version of the experiments in the present thesis most clearly reflects the facts about the expression of [ADD] in English.

4.4.2.1.1.2. English NSs: discussion

The data from the NSs of English shows a significant interaction between the *syntax* of *even* and *context* (*additive* vs. *non-additive*). In other words, whether or not [ADD] in encoded in scalar *additive* contexts in English is constrained by the syntactic position of this particle: when used in *prenominal* position, [ADD] is encoded in the meaning of *even*. Following the terminology of Cho and Slabakova (2014, 2015), I propose that [ADD] in the meaning of *even* is a covert and indirect feature in English. [ADD] is expressed covertly because its representation is constrained by syntax. Further, it is expressed indirectly because, I assume, it is a secondary semantic function of *even* (the primary being the expression of [SCAL]). Finally, presence of the additive operator is not perceived by NSs of English as signalling [ADD] in their language.

The next section will present the results from the L1 Persian L2 learners of English.

4.4.2.1.2. English L2 learners: results

The goal of this section is to analyze the performance of the English data from L1 Persian L2 learners of English (not separated by proficiency level). Figure (4.5) shows the felicity rating from these participants across both *fragment* (two left columns) and *non-fragment* (two right columns) experiment types in English. The statistical results from the statistical model with fixed effects of *syntax, context, presenceToo, type,* and their interactions are summarized in table (4.5).

Figure (4.5). Felicity rating for the L2 learners of English; by *type, syntax, context, presenceToo*

Table (4.5). Summary of effects of *syntax, context, presenceToo, type,* and their interactions
data: felicity rating from L2 learners of English

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	0.64767	0.05819	6270.00000	11.131	< 2e-16	***
context	-2.21840	0.04523	6270.00000	-49.046	< 2e-16	***
type	-0.11493	0.04536	6295.00000	-2.534	0.011308	*
presenceToo	-1.15388	0.04527	6274.00000	-25.490	< 2e-16	***
syntax:context	-0.50265	0.11637	6270.00000	-4.320	1.59e-05	***
syntax:type	-0.10635	0.11563	6270.00000	-0.920	0.357750	
context:type	0.30495	0.08990	6270.00000	3.392	0.000697	***
context:presenceToo	-3.67032	0.09038	6270.00000	-40.608	< 2e-16	***
type:presenceToo	0.09136	0.08365	6273.00000	1.092	0.274782	
syntax:presenceToo	0.06594	0.11561	6270.00000	0.570	0.568473	
syntax:context:type	0.41910	0.23125	6270.00000	1.812	0.069988	.
context:type:presenceToo	-0.33892	0.16705	6271.00000	-2.029	0.042519	*
syntax:context:presenceToo	-0.81607	0.23122	6270.00000	-3.529	0.000419	***

4.4.2.1.2.1. English L2 learners: Expression of [ADD]

As the plot shows, there is a main effect of *syntax* indicating the overall preference for the

prenominal position of *even*. There is also a main effect of *context* suggesting that *non-*

additive contexts are in general disfavoured. The important question here is how these L2

learners perform in terms of the expression of [ADD] in the L2, English. The results here

indicate a main effect of *presenceToo*: Presence of the additive operator *too*, as shown in the

bottom row of figure (4.5), significantly drops the rating for the *non-additive* conditions.

This suggests that *too* has a semantic component which makes it incompatible with the

non-additivity of the contexts. The results further show a significant interaction between

presenceToo, context, and *type* (*fragment* vs. *non-fragment*) suggesting that the additivity

effect is strongly signalled through the *presenceToo* manipulation; when the additive

operator *too* is present in combination with *even*.

The results further indicate that the three-way interaction between *syntax*, *context*, and *type* is not significant for the L2 learners of English suggesting that overall, the syntactic position of *even* does not interact with the additivity effect. This result confirms that the L2 learners of English do not express [ADD] through the *syntax-context* interaction in either versions of the experiments. I would like to point out here that pooling the *NoToo* and the *Too* condition together in analyzing the *syntax-context* interaction can present a confound in the interpretation of the results. One should be cautious here in noting the strong effect of *presenceToo* which significantly interacts with *context* and clearly signals the additivity effect. In other words, the bottom row in figure (4.5) showing the *Too* condition (where *too* is used in combination with *even*) clearly indicates that the additive effect is signalled through the use of *too.* As such, I believe in order to clearly investigate of the *syntax-context* interaction, the data from this condition must be excluded from analysis. In other words, when *too* is present in the structure (and it has a significant effect), one cannot clearly investigate whether the additivity effect can be attributed to the *syntax* of *even*. When the *NoToo* subset of the data is analyzed separately, however, one can more safely draw conclusions about the *syntax-context* interaction. As such, only the *NoToo* subset of the data was included in the statistical model to predict whether the additivity effect interacts with the *syntax* of *even*. The results of the statistical model are summarized below. As can be seen, the three-way interaction between *syntax, context,* and *type* is not significant.

Table (4.6). Summary of effects of *syntax, context,* and their interaction
data: felicity rating from L2 learners of English, the *NoToo* condition

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	6.225e-01	8.926e-02	3.113e+03	6.974	3.74e-12	***
context	-3.962e-01	6.939e-02	3.113e+03	-5.710	1.23e-08	***
type	-1.530e-01	6.945e-02	3.127e+03	-2.203	0.02764	*
syntax:context	-1.074e-01	1.785e-01	3.113e+03	-0.601	0.54756	
syntax:type	2.318e-03	1.774e-01	3.113e+03	0.013	0.98958	
context:type	4.534e-01	1.379e-01	3.113e+03	3.287	0.00102	**
syntax:context:type	2.916e-01	3.548e-01	3.113e+03	0.822	0.41114	

The absence of a significant interaction between *syntax* and *context* suggests that there is no significant distinction between *prenominal* versus *postnominal even* for the L2 learners of Persian in terms of the additivity effect. The same effect holds in both experiment *type*s: *fragment* and *non-fragment* experiments.

Therefore, so far, one can safely conclude that in the data from the L2 learners of English, the expression of [ADD] is not through the *syntax-context* interaction. They do not show target-like behaviour in this regard and assume that *even* has the same semantic content in *prenominal* and *postnominal* syntactic positions and does not encode the [ADD] in either position. What these learners do, instead, to express [ADD] is to assume that the additive operator *too* lexically contributes this component. This is evident from the high rejection of the *too* data (bottom row in figure (4.5) in *non-additive* contexts which significantly indicates the additivity effect. When *too* is present, the ratings for the *additive* contexts is extremely high and the *non-additive* contexts are strongly rejected. The inconsistency of the additive operator with *non-additive* contexts suggests that the L2 learners perceive of *too* as the means of expressing [ADD]. Note also that *even* is rated not significantly differently in the *additive* and *non-additive* contexts which suggests that this particle is not specified for [ADD]. Had it encoded [ADD], one would have expected its

incompatibility with *non-additive* contexts. Once again, the data here suggests that *prenominal* and *postnominal* are not rated significantly differently in either *additive* or *non-additive* contexts. *Even* is just treated as though it does not encode [ADD] at all, either directly or indirectly.

To statistically confirm the difference between the NS results and L2er results, the statistical model was fitted with interactions between *syntax, context,* and *L1* as well as *context*, *presenceToo*, and *L1*. The question is how the two groups differ in terms of the interactions that are associated with the expression of [ADD] in English, as discussed in the NS and L2er results above. The results of the model (as summarized in the table below) indicate that the two groups are significantly different in terms of the expression of [ADD] in English. This confirms that the L2 learners are not target-like in the way they encode [ADD] in English. In other words, the conclusion is that they have not acquired the covert and indirect strategy used by the NSs of English to encode [ADD].

Table (4.7). Summary of effects of *syntax, context, presenceToo,* and *L1* and their interactions data: English data by L1 (English or Persian)

	Estimate	Std. Error	df	t value	Pr(>|t|)
syntax	6.654e-01	4.450e-02	1.118e+04	14.954	< 2e-16 ***
context	-2.036e+00	3.467e-02	1.118e+04	-58.726	< 2e-16 ***
L1	-2.454e-01	8.206e-02	6.010e+02	-2.990	0.00290 **
presenceToo	-6.556e-01	3.214e-02	1.118e+04	-20.396	< 2e-16 ***
syntax:context	-7.162e-01	8.890e-02	1.118e+04	-8.057	8.88e-16 ***
syntax:L1	3.440e-02	8.423e-02	1.118e+04	0.408	0.68297
context:L1	5.473e-01	6.579e-02	1.118e+04	8.319	< 2e-16 ***
context:presenceToo	-2.326e+00	6.421e-02	1.118e+04	-36.228	< 2e-16 ***
L1:presenceToo	1.396e+00	6.082e-02	1.118e+04	22.944	< 2e-16 ***
syntax:context:L1	-5.205e-01	1.681e-01	1.118e+04	-3.096	0.00197 **
context:L1:presenceToo	3.302e+00	1.214e-01	1.118e+04	27.195	< 2e-16 ***

4.4.2.1.2.2. English L2 learners: discussion

Overall, the L2 learner results reported here suggest that L1 Persian L2 learners of English do not use the covert and indirect means of expressing [ADD]; i.e. through the interaction of *syntax* and *context*. The strategy used by the L1 Persian L2 learners of English to signal [ADD] in English, instead, is to use an additive operator, a morphological item inserted in the structure in combination with *even*, which lexically encodes [ADD]. This overt and direct means of expressing [ADD] is presumably the result of the properties of their L1, Persian, which the L2 learners have transferred to the task of L2 acquisition. I will return to this point later in the discussion (section 4.4.2.2).

4.4.2.1.2.3. English L2 learners: by-proficiency analysis[8]

One question with respect to the L2 learner data is whether they show any developmental pattern in the acquisition of the target-like properties as proficiency level increases. In other words, it would be interesting to explore the L2 learner data by proficiency *group* (*intermediate* vs. *advanced*) to see if these groups are any different in the L2 acquisition of the expression of [ADD] in this study. The comparison between the two proficiency groups is plotted in figure (4.6). The statistical results from the mixed-effects linear regression

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[8] Note that to address the research questions in this study, three-way interactions between *syntax-context-type* and *presenceToo-context-type* have been investigated throughout the analyses. In exploring proficiency *group* effects besides that, one would have to consider four-way interactions in the statistical models which are very hard to interpret and not conventional in statistical analyses. Therefore, to address by-proficiency *group* analysis throughout the studies reported in this thesis, I removed *type* (*fragment* vs*. non-fragment*) from the fixed effects of the models and included *group* (*intermediate* vs. *advanced*) in the models.

model fitted with the fixed effects for *syntax, context, presenceToo, proficiency group*, and their interactions are summarized in table (4.7).

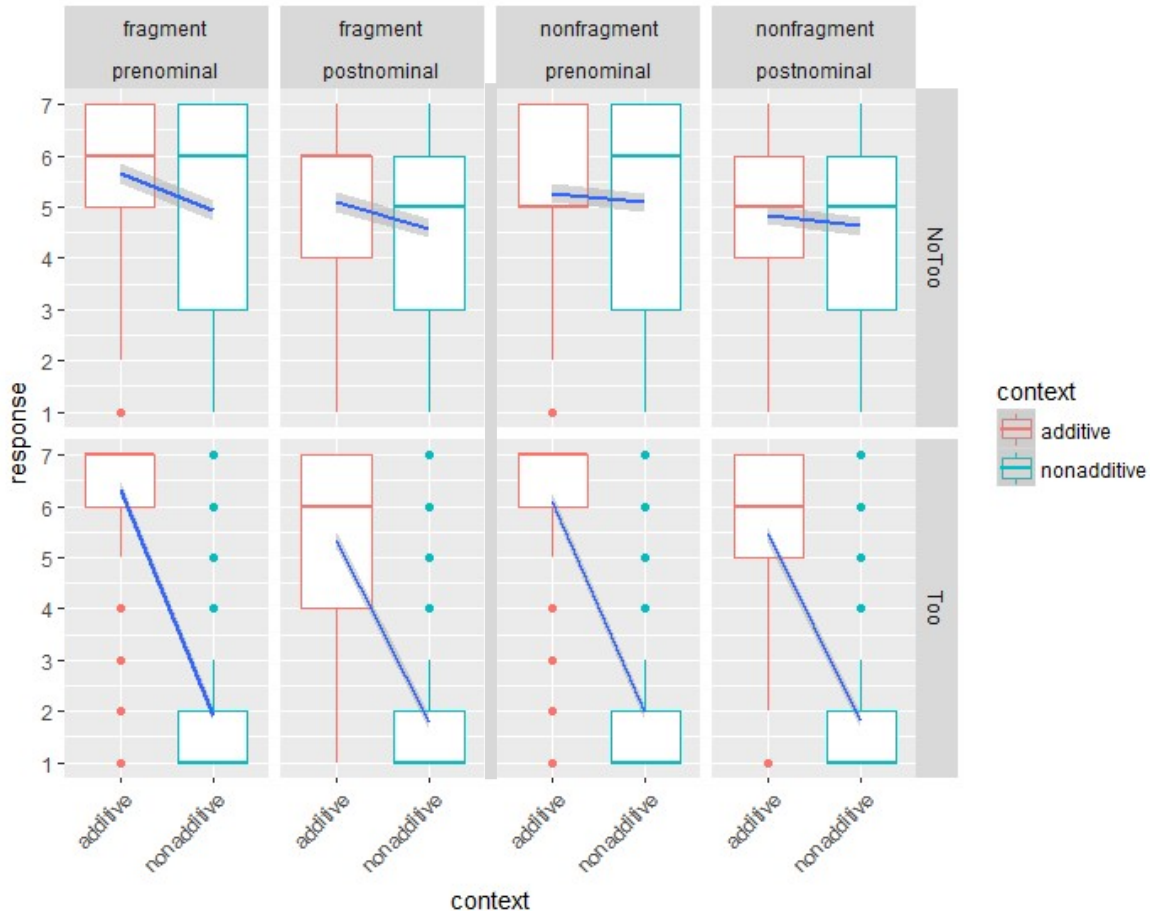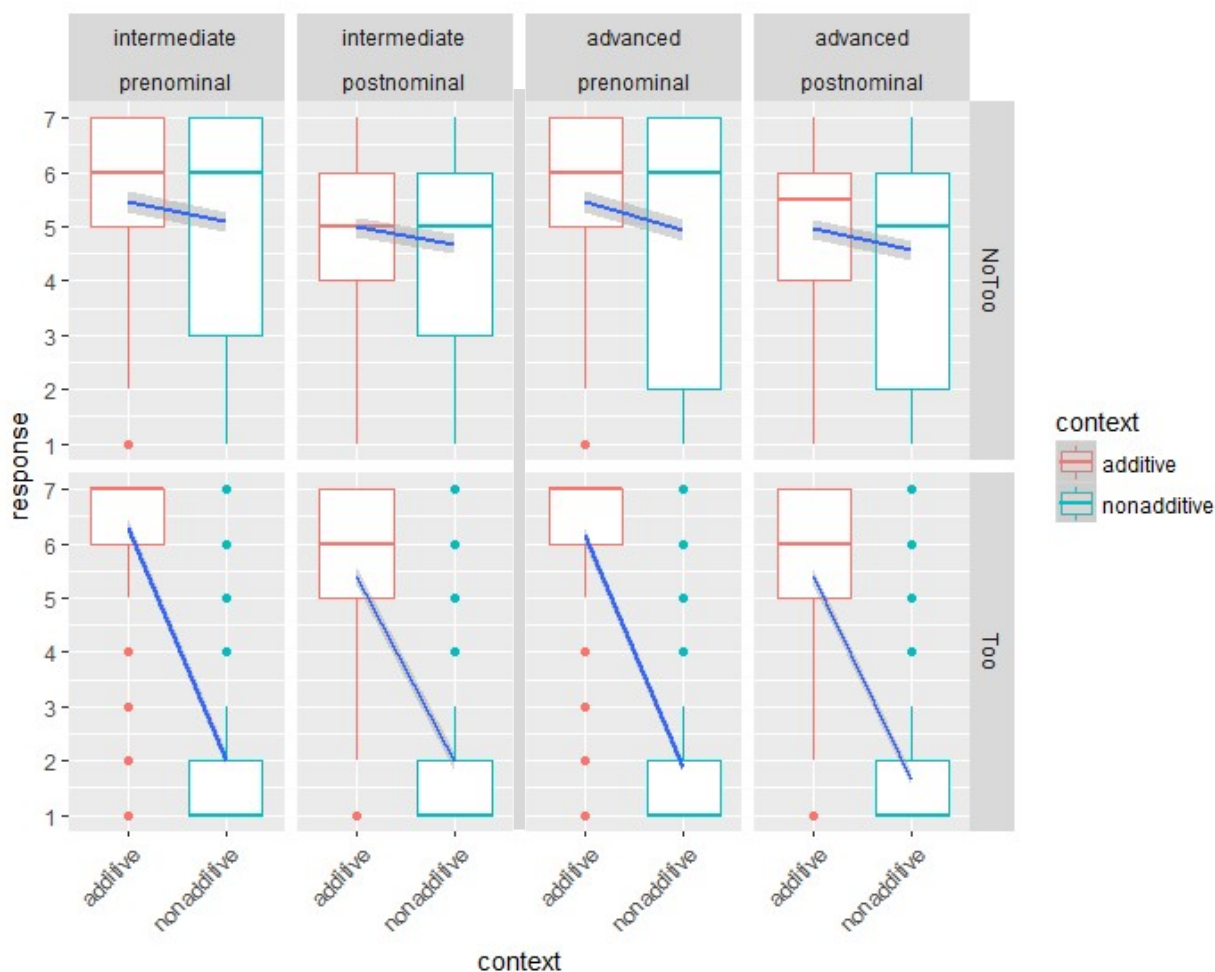
Figure (4.6). Felicity rating for the L2 learners of English; by *group, syntax, context, presenceToo*

Table (4.7). Summary of effects of *syntax, context, presenceToo, proficiency group,* and their interaction. Data: felicity rating from L2 learners of English

```
                              Estimate  Std. Error        df t value   Pr(>|t|)
syntax                         0.64759  0.06766 6271.00000   9.571  < 2e-16 ***
context                       -2.20463  0.05264 6272.00000 -41.879  < 2e-16 ***
group                          0.11085  0.25302   44.00000   0.438 0.663432
presenceToo                   -1.13592  0.05166 6272.00000 -21.987  < 2e-16 ***
syntax:context                -0.57926  0.13532 6271.00000  -4.281 1.89e-05 ***
syntax:group                  -0.03127  0.17781 6271.00000  -0.176 0.860399
context:group                  0.15891  0.13826 6272.00000   1.149 0.250427
context:presenceToo           -3.64278  0.10330 6271.00000 -35.265  < 2e-16 ***
group:presenceToo              0.11839  0.12862 6274.00000   0.920 0.357381
syntax:presenceToo             0.06597  0.11578 6271.00000   0.570 0.568868
syntax:context:group          -0.27144  0.35560 6271.00000  -0.763 0.445297
context:group:presenceToo      0.03896  0.25688 6271.00000   0.152 0.879452
syntax:context:presenceToo    -0.81708  0.23157 6272.00000  -3.528 0.000421 ***
```

One relevant question is whether the two groups differ in terms of the acquisition or non-acquisition of the *syntax-context* interaction that holds in English[9]. Do *advanced* learners get any better than the *intermediate* ones at noticing that *prenominal even* encodes an additive component in its semantics while *postnominal even* does not? The statistical model shows that the three-way interaction between *syntax, context,* and *group* is not significant. This suggests that the L2 learners do not progress in the acquisition of the significant *syntax-context* interaction in English as proficiency increases. This property therefore seems to be hard to acquire for both groups of L2 learners. It could be concluded, therefore, that the L2 acquisition of the covert and indirect expression of [ADD] poses great difficulty for the L2 learners. Even at higher levels of proficiency, L2 learners of English fail to notice the strategy used by NSs of English to encode [ADD] in the semantics of *prenominal even*.

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[9] Recall that in the analysis of the *syntax-context* interaction in the L2 learner data, it was decided that this interaction must be explored only in the *NoToo* condition where *even* is used alone. This was done because of the main effect of *presenceToo* which lowers the ratings for the *too* condition where *too* is present in the *non-additive* contexts. Therefore, in the by-group analysis here, we ignore the two-way *syntax-context* interaction from the results table and consider the three-way interaction between *syntax, context, and group* only.

In addition to the L2 acquisition of the *syntax-context* interaction (the covert and indirect expression of [ADD]), another question for the L2 learners would be if they get any better at noticing that *presenceToo* does not in fact interact with *context* in English. In other words, do more advanced L2 learners of English come to realize at all that the L2 does not express [ADD] by using the additive operator in combination with *even*? Are they able to improve at learning that the L2 does not use an overt and direct means of expressing [ADD]? The three-way interaction between *context, presenceToo,* and proficiency *group* is not significant indicating that there is no significant difference between the two proficiency groups in failing to acquire that the L2 expression of [ADD] is not through the presence of the additive operator *too*. The *context-presenceToo* interaction is still very strong for the advanced learners suggesting that besides the acquisition of the *syntax-context* interaction in English, the absence of the *context-presenceToo* is another difficult task for the L2 learners.

4.4.2.1.3. Summary of English results from NSs and L2 learners

Results from the English NS data indicate that the predictions of Wagner (2013, 2015) with respect to the encoing of [ADD] in scalar additive contexts in English are borne out (mainly in the fragment version of the experiments). These results confirm that in English, the expression of [ADD] is constrained by *syntax*: In *prenominal* position, *even* overtly and directly encodes [ADD] which makes it inconsistent with *non-additive* contexts, while in *postnominal* position*, even* does not encode this component. Further, NSs of English choose *postnominal even* over *prenominal even* in *non-additive* contexts (at least in the *fragment* version of the experiments). The data from the NSs of English also indicated that the

presence of the additive operator *too* in combination with *even* does not interact with the additivity effect. The additivity effect is independent of *presenceToo* and is signalled by the *syntax-context* interaction, as discussed.

The L1 Persian L2 learners of English demonstrated that the acquisition of the English covert and indirect expression of [ADD] is a difficult acquisition task. Overall, these L2 learners failed to pick up the strategy used by NSs of English in expressing [ADD]. This result was seen across both intermediate and advanced L2 learners suggesting that this challenge is not easily surmountable. In place of the L2 means of expressing [ADD], these L2 learners, including the advanced ones, use a direct and overt means: by accepting the presence of the additive operator *too* which encodes [ADD] in combination with *even*. This is the strategy which is predicted to be used by Persian NSs. At this point, I attribute the L2 learners' failure at both acquiring the *syntax-context* interaction in English and noticing that the *presenceToo-context* interaction does not hold in English to the properties of their L1, Persian, which I will explore in the next section.

This section presents the results, analysis, as well as comparison of the performance of NSs and L2 learners of Persian.

4.4.2.2.1. Persian NSs: results

The results from the NSs of Persian are plotted in figure (4.7). The data is divided by experiment *type* (*fragment* vs. *non-fragment*), *syntax* (*prenominal* vs. *postnominal* position of *hatta* in Persian), *context* (*additive* vs. *non-additive*), as well as *presenceToo* (the presence vs. absence of *ham*, the Persian additive operator in combination with *hatta*: the *Too* condition involves Persian sentences with *ham* vs. the *NoToo* involving sentences lacking *ham*).
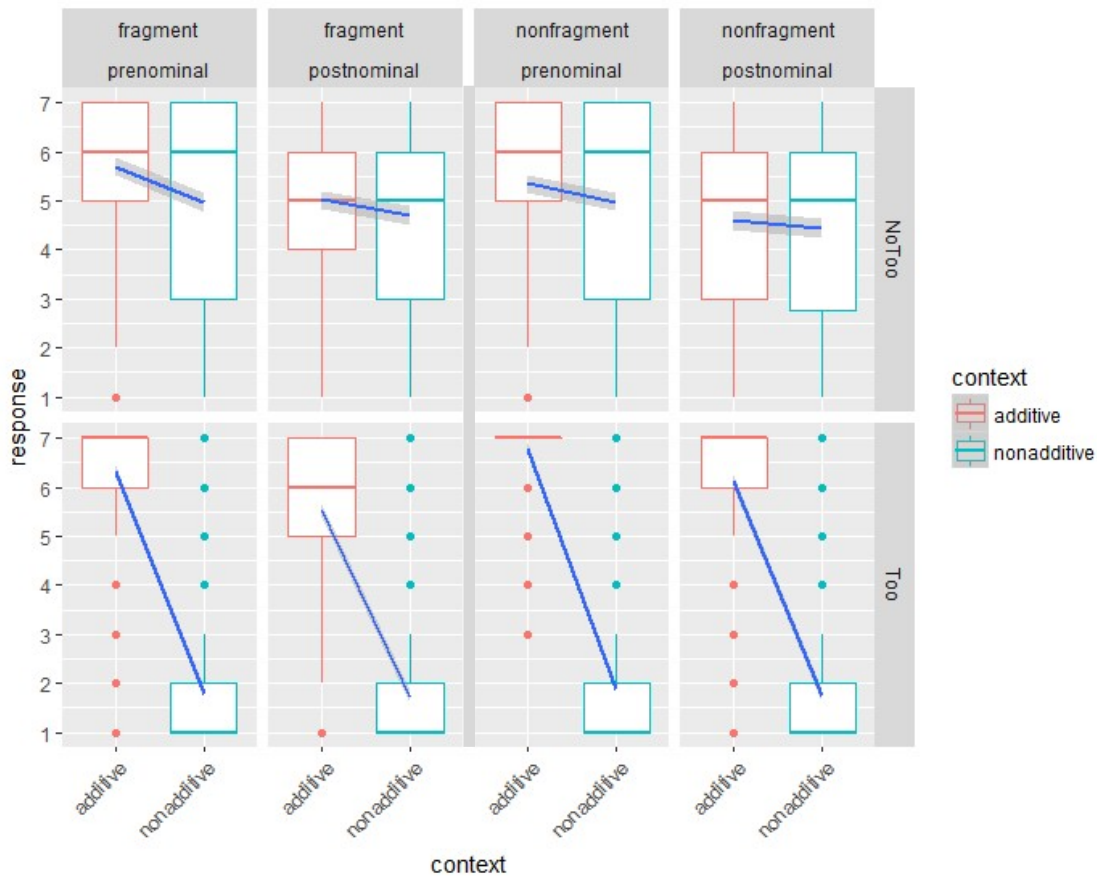
Figure (4.7). Felicity rating for the NSs of Persian; by *type, syntax, context, presenceToo*

Results from the mixed-effects linear regression model fitted with fixed effects for *type, syntax, context, presenceToo,* and their interactions are summarized in table (4.8).

Table (4.8). Summary of effects of *syntax, context, presenceToo, type,* and their interactions data: felicity rating from Persian NSs

	Estimate	Std. Error	df	t value	Pr(>|t|)
syntax	0.67721	0.05534	6355.00000	12.238	< 2e-16 ***
context	-2.49523	0.04301	6356.00000	-58.013	< 2e-16 ***
type	0.03874	0.04287	6370.00000	0.904	0.3662
presenceToo	-0.96272	0.04296	6355.00000	-22.409	< 2e-16 ***
syntax:context	-0.65104	0.11067	6355.00000	-5.883	4.25e-09 ***
syntax:type	0.09074	0.10962	6355.00000	0.828	0.4078
context:type	-0.05382	0.08523	6355.00000	-0.631	0.5278
context:presenceToo	-4.11631	0.08592	6355.00000	-47.911	< 2e-16 ***
type:presenceToo	0.56394	0.07918	6355.00000	7.122	1.18e-12 ***
syntax:presenceToo	-0.18703	0.10962	6355.00000	-1.706	0.0880 .
syntax:context:type	0.26350	0.21924	6355.00000	1.202	0.2294
context:type:presenceToo	-0.72041	0.15837	6355.00000	-4.549	5.49e-06 ***
syntax:context:presenceToo	-0.42129	0.21923	6355.00000	-1.922	0.0547 .

Overall, the results indicate a main effect for *syntax*, suggesting that *prenominal* position for *hatta* is the preferred syntactic position for this particle. *Non-additive* contexts are overall dispreferred when *hatta* is used, main effect of *context*. This is not surprising assuming that in most uses, *hatta* appears in contexts that satisfy both a scalar presupposition (encoded in *hatta*) and an additive presupposition (encoded in the additive operator *ham*, as will be shown later). To investigate the research question about how [ADD] is expressed in Persian, detailed discussion of the results is presented in the following subsection.

4.4.2.2.1.1. Persian NSs: Expression of [ADD]

As the distribution of the data in figure (4.7) shows, there is a main effect of *presenceToo*. The ratings for the *Too* condition where *ham* has been used in combination with *hatta* is overall significantly lower than the *NoToo* condition where *hatta* has been used alone

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which seems, as seen in plot (4.7), to be due to the occurrence of this particle in non-additive contexts. Crucial to the analysis of the Persian data is that there is a significant interaction between *presenceToo* and *context*. This suggests that the additivity effect (signalled by a significant difference between the ratings for the *additive* and *non-additive* contexts) is significantly greater in the *Too* condition where the additive operator *ham* has been used. In other words, *hatta-ham* combinations clearly signal the additivity effect to a greater extent than *hatta* when used alone. This would mean that presence of the additive operator in the structure increases the rejection rate for *hatta-ham* combinations in contexts that do not satisfy the additive presupposition, the *non-additive* conditions. The conclusion that can be drawn from this is that *ham* encodes a semantic component, namely [ADD], which otherwise is not encoded in *hatta* and that is why *hatta-ham* ratings are extremely low in *non-additive* contexts while these contexts are highly accepted (not statistically differently from the *additive* contexts, as will be shown later) in the *hatta* conditions.

Another finding is that the three-way interaction between *syntax-context,* and experiment *type* (*fragment* vs. *non-fragment*) is not statistically significant. Therefore, the NSs of Persian do not express [ADD] through the syntactic positioning of *hatta* in either *prenominal* or *postnominal* position throughout (both versions of) the experiment. Note that in exploring the *syntax-context-type* interaction above, the data used in the statistical model summarized in table (4.8) collapses the *NoToo* condition where *hatta* is used alone with the *Too* condition where *hatta* is used in combination with *ham*, the additive operator which independently was shown to strongly signal the additivity effect. As discussed before in section (L1Persian L2 learners of English results), that this is a confound in the statistical

analysis because in the *Too* condition we cannot entirely be sure if the additivity effect observed is a function of the *syntax-context* interaction. Therefore, in the investigation of the presence or absence of a significant interaction between *syntax* and *context,* I excluded the *Too* condition and only looked at the *NoToo* data and ran the statistical model including the interaction between *syntax, context,* and *type* (to see if there is a difference between *fragment* and *non-fragment* experiment versions) on this subset only. The results are summarized below.

Table (4.9). Summary of effects of *syntax, context, type,* and their interactions
data: NSs of Persian; *NoToo* condition

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	0.78247	0.09016	3159.00000	8.679	< 2e-16	***
context	-0.44657	0.07009	3159.00000	-6.372	2.14e-10	***
type	-0.20502	0.06982	3169.00000	-2.936	0.00335	**
syntax:context	-0.44637	0.18031	3159.00000	-2.476	0.01335	*
syntax:type	0.25016	0.17856	3159.00000	1.401	0.16133	
context:type	0.30817	0.13886	3159.00000	2.219	0.02654	*
syntax:context:type	0.28725	0.35715	3159.00000	0.804	0.42129	

The prediction for the NSs of Persian was that *prenominal* and *postnominal* positions of *hatta* would not be different with respect to the additivity effect. Therefore, the *syntax-context* interaction was not expected to come out significant in either of the experiment *types* (*fragment* vs. *non-fragment*). This prediction is borne out as the three-way interaction between *syntax, context,* and experiment *type* is not significant. In other words, it could be concluded that the syntax of *hatta* in Persian, does not interact with the additivity effect. Since both *prenominal hatta* and *postnominal hatta* are highly accepted in both *additive* and *non-additive* contexts, one conclusion is that *hatta* does not encode [ADD] in its semantic representation in either syntactic position. If it did encode [ADD], one would have expected

a high rejection rate in the *non-additive* contexts due to the inconsistency of the presuppositional contribution of [ADD] and the non-additivity of the context.

In summary, the Persian NS results show that in Persian the syntactic position of *hatta* does not interact with the encoding of [ADD]. In other words, Persian NSs happily accept *hatta* in both syntactic positions in *additive* as well as *non-additive* contexts. The strategy used by NSs of Persian for expressing the [ADD] is to use the additive operator *ham* in combination with *hatta* in scalar additive contexts. Since these combinations are rejected in *non-additive* contexts as opposed to *hatta* alone which is highly accepted in both contexts, one can safely conclude that *ham* contributes an additive component which is in conflict with *non-additive* contexts.

To conclude this section, another finding from the Persian NS results is that, as figure (4.7) illustrates, they do not show a strong preference[10] for *hatta...ham* combinations over *hatta* alone in additive context. One would have expected a high dispreference rate for *hatta* alone in additive contexts because Maximize Presupposition would, in principle, predict that when there is a competition between not using an operator and using it, it must be used if the context satisfies the relevant presupposition. In the present case, therefore, using the additive operator *ham* is predicted to be obligatory[11] in combination

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[10]Note that the results of the statistical model ran on the additive subset of the Persian data, as summarized below, indicated a significant preference for the presence of the additive operator *ham* in additive contexts.

	Estimate	Std. Error	df	t value	Pr(>|t|)
presenceToo	1.018e+00	4.823e-02	3.168e+03	21.11	<2e-16 ***

[11] I assume, based on the statistical results found (see footnote 9), that *ham* is obligatory in additive contexts and attribute this finding to Maximize Presupposition. However, whether or not Maximize Presupposition forces the *insertion* of lexical content is debatable (see Rouillard and Schwarz 2017). Note, in addition, that some authors, e.g. Bade (2016) and Aravind & Hackl (2017), have argued that the obligatory use of additive particles does not have the signature of Maximize Presupposition. Whether these accounts hold for the properties of the additive operator in Persian requires further investigation which I leave for future research.

with the scalar operator *hatta* in scalar additive contexts. One explanation for why the results here do not indicate this effect could be that the scalar presupposition of *hatta* in conjunction with contextual information (additivity satisfied) is may be sufficient to trigger an additive inference for the speakers. As such, *hatta*, while not semantically encoding [ADD], is well acceptable in contexts that satisfy additivity; there is no reason why it would be blocked from additive contexts under the assumption that it just does not encode the additive component. Adopting this view, one would expect that if speakers were to 'produce' rather than 'judge the felicity of' (as imposed by the experiment task here) these constructions in scalar additive contexts, they would choose an alternative which adheres to Maximize Presupposition by encoding both the scalar and additive presuppositions, e.g. *hatta...ham* combinations. This, I believe, based on personal intuition, is indeed the case, although production studies and/or corpus studies are required to confirm this hypothesis. At this point, following informal consultation with multiple NSs of Persian, I maintain that in Persian, both particles have to be used in combination in scalar additive contexts.

Another possible explanation of this finding can be related to the semantic processing of a silent additive operator in the structure which I will describe below. Often times, the additive operator *ham* in Persian, is cliticized on to the associated NP and is used in the reduced form *–am* which prosodically is unstressed and weakly pronounced. I think another possibility is that the NSs, when facing *hatta-NP* (or *NP-hatta*) in the experiment items in additive contexts, actually process it as though the additive clitic was present. In other words, since most uses of *hatta* are in additive contexts, as confirmed in the results of the present study (main effect of *context*), I hypothesize that the speakers could by default be processing *ham* in additive contexts, without even noticing its absence in the syntax.

This hypothesis also requires further investigation which I leave aside for future investigation.

4.4.2.2.1.2. Persian NSs: discussion

The Persian NS results confirm the prediction that in this language, [ADD] is expressed by dedicated morphology. This semantic feature is encoded in the lexical meaning of the additive operator *ham*, an overt feature encoding. Further, since the expression of [ADD] is the primary semantic function of *ham*, I propose that this feature is directly encoded by *ham*. In addition, the prediction was borne out that *hatta* does not encode [ADD] because, as the results confirm, its use is felicitous in *non-additive* contexts which are strongly rejected in the case of *hatta-ham* where [ADD] is clearly encoded. Finally, it was expected that the syntactic position of *hatta* does not interact with any significant additivity effect; the results reported here confirm that *hatta* does not encode [ADD] in either *prenominal* or *postnominal* position.

4.4.2.2.2. Persian L2 learners: results

Let us now turn to the analysis of the results from the L1 English L2 learners of Persian (not separated by proficiency level). Their felicity ratings are plotted in figure (4.8) below and the statistical results from the model fitted with fixed effects for *syntax, context, presenceToo,* and *type* and their interactions are summarized in table (4.10).
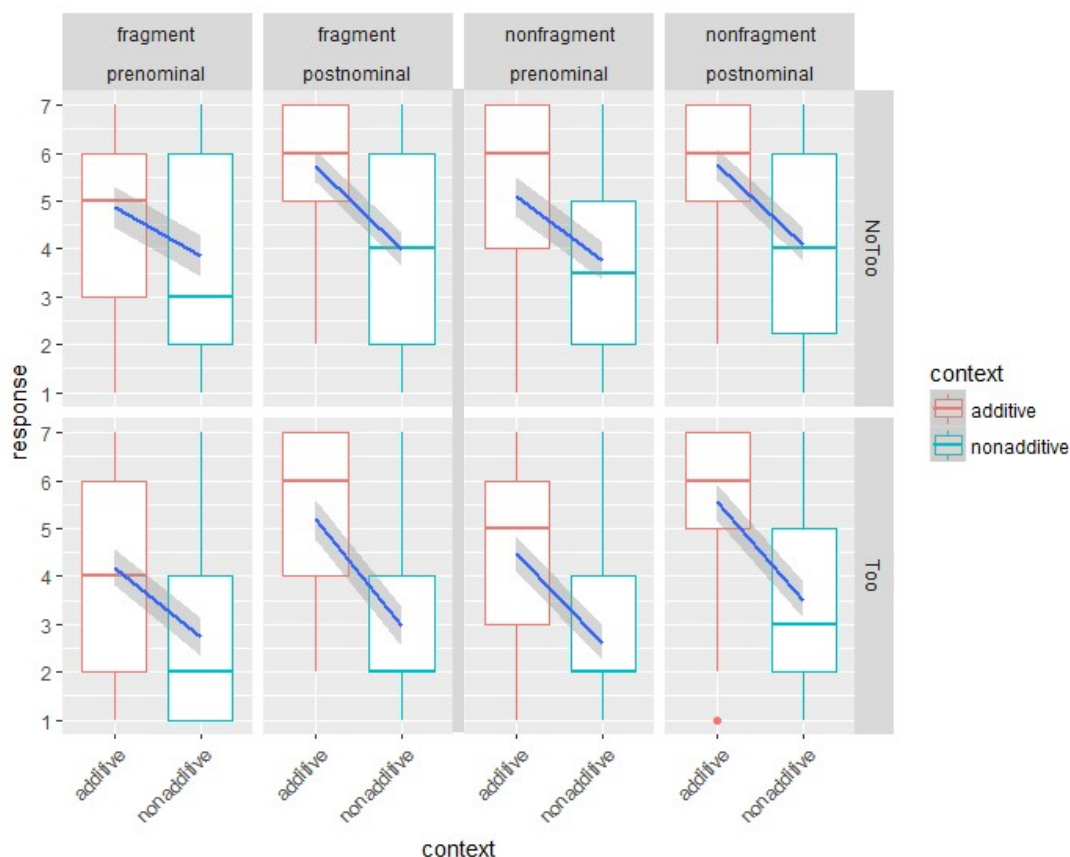
Figure (4.8). Felicity rating for the L2 learners of Persian; by *type, syntax, context, presenceToo*

Table (4.10). Summary of effects of *syntax, context, presenceToo, type,* and their interactions data: felicity rating from L2 learners of Persian

	Estimate	Std. Error	df	t value	Pr(>|t|)	
syntax	-0.91695	0.12690	1337.80000	-7.226	8.35e-13	***
context	-1.59021	0.09713	1334.10000	-16.371	< 2e-16	***
type	0.07397	0.09917	1338.90000	0.746	0.4559	
presenceToo	-0.79006	0.09707	1336.60000	-8.139	8.88e-16	***
syntax:context	0.64281	0.25344	1333.70000	2.536	0.0113	*
syntax:type	-0.26450	0.25121	1330.50000	-1.053	0.2926	
context:type	-0.20958	0.19242	1330.80000	-1.089	0.2763	
context:presenceToo	-0.47636	0.19406	1334.20000	-2.455	0.0142	*
type:presenceToo	0.19835	0.18135	1330.70000	1.094	0.2743	
syntax:presenceToo	-0.39491	0.25161	1337.80000	-1.570	0.1168	
syntax:context:type	-0.66209	0.50246	1330.60000	-1.318	0.1878	
context:type:presenceToo	0.00511	0.36270	1330.50000	0.014	0.9888	
syntax:context:presenceToo	-0.02271	0.50276	1332.80000	-0.045	0.9640	

4.4.2.2.2.1. Persian L2 learners: Expression of [ADD]

The statistical results from the L1 English L2 learners of Persian show main effects of *syntax,* and *context*. The acceptance rate for L2 learners of Persian is significantly higher in the *prenominal* syntactic position of *hatta*. There is a main effect of *context* suggesting that *hatta* is preferred in *additive* contexts over *non-additive* contexts. In terms of the expression of [ADD] in Persian, the results here show that the interaction between *context, presenceToo,* and experiment *type* (*fragment* vs. *non-fragment*) is not significant suggesting that the L2 learners do not attribute the additivity effect to the presence of the additive operator *ham* in either experiment *type* in Persian. Furthermore, the three-way interaction between *syntax, context,* and *type* does not come out significant, either, suggesting that these L2 learners do not have a preference for either syntactic position of *hatta* in the L2 for the expression of [ADD]. In other words, the L2 learners in this study do not attribute the expression of [ADD] to either the presence of the additive operator *ham* or to any specific syntactic positioning of *hatta*. Further, the three-way interaction between *syntax, context,* and *presenceToo* is not significant. Assuming the overall preference for *additive* contexts in all conditions, I interpret this finding as showing that these L2 learners assume, that *hatta* encodes [ADD] in its semantics in all conditions; in other words, they treat this particle as additive across the board. Looking at the plots in figure (4.8), it is clear that their judgments barely differ across different conditions. While the additivity effect (a significant difference between the ratings for the *additive* and *non-additive* contexts) is clearly strong in all the experimental conditions plotted, the L1 English L2 learners of Persian do not attribute this to either the presence of *ham* or to syntactic position. Since the use of *hatta* is accepted in *additive* contexts and disfavoured in *non-additive* contexts across all conditions,

I conclude that for these L2 learners, *hatta* must lexically encode [ADD], besides [SCAL], which renders its use incompatible with *non-additive* contexts. Note also that there is a main effect of *presenceToo* indicating that the ratings for the *Too* condition is overall lower than the *NoToo* condition. Assuming the finding that *hatta* is always *additive* to these speakers, one can conclude that they find the use of the additive operator *ham* redundant and rate its presence in combination with *hatta* (encoding ADD) lower.

To statistically compare the performance of the NSs and L2ers of Persian, a statistical model was fitted with three-way interactions between *syntax, context,* and *L1* as well as *context*, *presenceToo*, and *L1*. As the results table below confirms, the two groups are significantly different in terms of using the interactions of interest to encode [ADD]: they are significantly different with respect to the *syntax-context* interaction, which is the English strategy to encode [ADD], as well as the *presenceToo-context* interaction, which is the target (Persian) strategy.

Table (4.14). Summary of effects of *syntax, context, presenceToo,* and *L1* and their interactions data: Persian data by L1 (Persian or English)

	Estimate	Std. Error	df	t value	Pr(>|t|)
syntax	0.12069	0.05555	7718.00000	2.173	0.0298 *
context	-2.17177	0.04284	7713.00000	-50.695	< 2e-16 ***
L1	-0.36454	0.17914	56.00000	-2.035	0.0466 *
presenceToo	-0.89586	0.04012	7717.00000	-22.332	< 2e-16 ***
syntax:context	-0.19205	0.11109	7713.00000	-1.729	0.0839 .
syntax:L1	-1.50549	0.12672	7719.00000	-11.880	< 2e-16 ***
context:L1	0.87482	0.09743	7714.00000	8.979	< 2e-16 ***
context:presenceToo	-2.77417	0.08022	7712.00000	-34.582	< 2e-16 ***
L1:presenceToo	0.21791	0.09150	7719.00000	2.381	0.0173 *
syntax:context:L1	1.31450	0.25341	7715.00000	5.187	2.19e-07 ***
context:L1:presenceToo	3.36409	0.18297	7714.00000	18.386	< 2e-16 ***

4.4.2.2.2.2. Persian L2 learners: discussion

The L2 learners of Persian seem to fail to acquire the strategy used by NSs of Persian to encode [ADD] in scalar additive contexts which is by overtly and directly expressing it through the use of the additive operator *ham*. Furthermore, they do not use their L1 (English) means of encoding this semantic component, either, which is through the covert and indirect expression of it in *prenominal* syntactic position (*syntax-context* interaction) which suggests that they have successfully acquired the absence of a *syntax-context* interaction in the L2 (Persian). Instead, the L2 learners assume the same semantic content in terms of [ADD] for *hatta* in both syntactic positions: They assume that the L2 *hatta* has the same semantic representation as their L1 *prenominal even*; that is, the L2 *hatta* encodes [ADD] (besides [SCAL] of course) across the board. Therefore, the expression of [ADD] for the L1 English L2 learners of Persian is overtly but indirectly through the use of a lexical item *hatta*. [ADD] for the L2 learners is an overt semantic feature because had it been covert, it should have been constrained by syntax, as per their L1. It is also an indirect feature because it is encoded as a secondary function of *hatta* besides [SCAL]. It seems that having noticed the absence of a syntax-context interaction in Persian, the L2ers attribute the stronger meaning of their L1 *even* to all instances of L2 *hatta*. In addition, having learnt the semantics of the additive operator *ham* independently, they disprefer its use in combination with *hatta*.

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4.4.2.2.2.3. Persian L2 learners: by-proficiency analysis

The goal of this section is to investigate whether L2 learners of Persian improve in the acquisition of target-like properties as proficiency level increases. Figure (4.9) plots the Persian L2 learner results divided by *syntax, context, presenceToo,* and *proficiency group* (*intermediate* vs. *advanced*)*.* In particular, the research question here is whether the higher level proficiency L2 learners perform any better than lower level ones in terms of the acquisition or non-acquisition of the L2 strategy of encoding [ADD] which is by overtly and directly expressing it through the insertion of the additive operator *ham*.
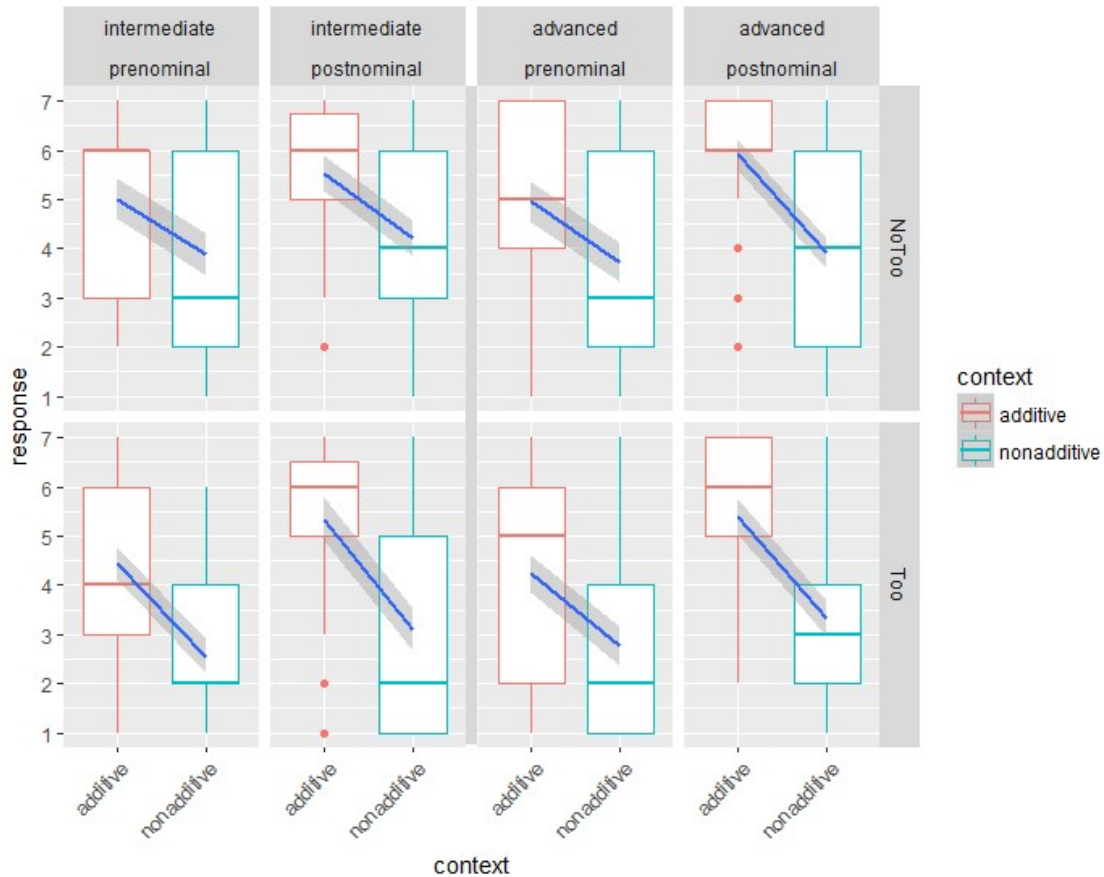
Figure (4.9). Felicity rating for the L2 learners of Persian; by *group, syntax, context, presenceToo*

The statistical model with the fixed effects of *syntax, context, presenceToo, proficiency group,* and their interactions are summarized in table (4.11).

Table (4.11). Summary of effects of *syntax, context, presenceToo, proficiency group,* and their interaction. Data: felicity rating from L2 learners of English

	Estimate	Std. Error	df	t value	Pr(>|t|)
syntax	-8.412e-01	1.511e-01	1.339e+03	-5.567	3.13e-08 ***
context	-1.586e+00	1.153e-01	1.334e+03	-13.756	< 2e-16 ***
group	-1.899e-02	6.755e-01	8.100e+00	-0.028	0.97826
presenceToo	-8.396e-01	1.135e-01	1.336e+03	-7.399	2.42e-13 ***
syntax:context	4.975e-01	3.019e-01	1.334e+03	1.648	0.09961 .
syntax:group	2.738e-01	3.878e-01	1.332e+03	0.706	0.48022
context:group	-4.739e-02	2.968e-01	1.332e+03	-0.160	0.87316
context:presenceToo	-7.007e-01	2.269e-01	1.334e+03	-3.088	0.00205 **
group:presenceToo	-1.763e-01	2.799e-01	1.332e+03	-0.630	0.52891
syntax:presenceToo	-3.960e-01	2.515e-01	1.339e+03	-1.575	0.11561
syntax:context:group	-8.768e-01	7.755e-01	1.331e+03	-1.131	0.25841
context:group:presenceToo	-1.045e+00	5.598e-01	1.332e+03	-1.866	0.06224 .
syntax:context:presenceToo	-6.737e-03	5.026e-01	1.334e+03	-0.013	0.98931

The statistical results do not reveal any significant difference between the two L2 groups with respect to the three-way interactions of interest: First, the *presenceToo-context-group* interaction is not statistically significant. This suggests that even at higher levels of proficiency, L2 learners are not able to acquire the overt and direct way of expressing [ADD] in Persian; they fail to notice that [ADD] is encoded in the semantic representation of *ham* and is realized by this morpheme overtly to express it. One can conclude here that the L2 acquisition of the direct and overt expression of [ADD] is a difficult task for the L2 learners.

Second, the *syntax-context-group* interaction is not significant, either. This suggests that even the intermediate L2 learners have successfully learnt that, unlike their L1, the L2 does not use the covert and indirect strategy for expressing [ADD]. In other words, theL2

learners are able, even at lower levels of proficiency, to acquire the fact that in Persian, the semantic content of *hatta* does not interact with its syntactic position and therefore *hatta* has the same semantic representation in both *prenominal* and *postnominal*. This suggests that noticing that the L1 covert and indirect expression of [ADD] does not hold in the L2 does not present L2 learners with great difficulty. Further, as shown in the plot, since *hatta* is highly accepted in *additive* contexts and *rejected* in *non-additive* contexts in all conditions, it could be concluded that the L2 learners assume an additive interpretation for *hatta* across the board. Therefore, for these L2 learners [ADD] is expressed overtly but indirectly in the semantic representation of *hatta.*

4.4.2.2.3. Summary of Persian results from NSs and L2 learners

In the previous section section, it was first shown that, in Persian, the semantic feature [ADD] is overtly and directly encoded onto the additive operator *ham* which is used in combination with *hatta* in scalar additive contexts to express [ADD]. Further, it was shown that the syntactic position of *hatta* does not interact with the additivity effect; *hatta* just does not encode [ADD] at all regardless of its syntactic position.

As for the L1 English L2 learners of Persian, the results indicated that these learners are able to notice that the syntactic position of *hatta* does not interact with the expression of [ADD] in Persian at relatively early stages of acquisition. These L2 learners, however, even at higher levels of proficiency, failed to acquire how [ADD] is expressed in scalar additive contexts, which is by overtly encoding it on the additive operator. The acquisition of the overt and direct expression of [ADD] on *ham* in scalar additive contexts must therefore be a difficult task for the L2 learners. Having failed to acquire this, the L2 learners

extend the *additive* reading of their L1 *prenominal even* onto Persian *hatta* and assume that this particle is always additive in Persian. This can explain the overall lower rating for the *too* condition where *ham* is present; the L2 learners assume an additive interpretation for *hatta* and think that the use of an additive operator *ham* is redundant in combination with it.

4.5. Discussion

This section discusses the findings from NSs and L2 learners in the two studies reported in this thesis with the goal of providing insights into the understanding of the L2 learner development and learning tasks and the potential challenges they face in L2 acquisition assuming the FRH and with focus on L1 effects on L2 acquisition. First, I will discuss the L1 results from speakers of English followed by their L2 results in Persian. Then I will proceed to the L1 results from speakers of Persian followed by their L2 results in English. The L2 results will be discussed in light of the predictions made for their learning tasks based on the architecture of the FRH, the processes of feature mapping and feature reassembly, as discussed is section 3.6.2 of chapter 3.

4.5.1. Results from NSs of English

4.5.1.1. L1 English

The NS results from NSs of English in this study reveal the following patterns on the expression of [ADD] in scalar additive contexts in English.

The prediction about English was that the expression of [ADD] would be constrained by the syntactic position of *even*. *Even* was predicted to necessarily encode [ADD] in its lexical specification in prenominal position and not encode [ADD] in postnominal position.

The results indicated that these predictions were indeed borne out overall and in particular in the fragment version of the experiments. NSs of English prefer the use of *even* in prenominal syntactic position in scalar additive contexts. Further, in non-additive contexts, *even* in prenominal position is dispreferred confirming the presence of an additive component, [ADD], in its feature specification. In addition, *even* in postnominal position is accepted by NSs in non-additive contexts more than *prenominal*. Had *even* in postnominal position encoded [ADD] in its meaning, one would have expected it to be incompatible with non-additive contexts. This confirms the prediction that in English the semantic feature specification of *even* is constrained by syntax: the expression of [ADD] is covert and indirect.

4.5.1.2. L2 Persian

The L2 learner results here will be discussed in light of the FRH architecture of L2 acquisition: based on the learning tasks involved in the two stages of 'feature mapping' and 'feature reassembly'.

4.5.1.2.1. *L1 English L2 learners of Persian:* Feature mapping

Prediction (1): At the mapping stage of the L2 acquisition of the overt and direct expression of [ADD] in Persian, the L2 learners would presumably transfer the representation of their L1 *even*, given that they have been taught that these two particles are equivalent. As such, the first prediction was that they would map the feature specification for L1 *even* onto *hatta*. This would mean that the L2 learners were expected to show properties related to their L1 covert and indirect expression of [ADD]. Specifically, they were predicted to accept prenominal *hatta* in additive contexts and reject it in non-additive contexts. They were also expected to accept postnominal *hatta* more than prenominal in non-additive contexts.

Before presenting the results for prediction (1), another prediction for the mapping stage will be discussed below. Results of the experiments for both predictions (1) and (2) will be discussed after.

Prediction (2): At the mapping stage the L2 learners should be able to notice the presence of *ham* in combination with *hatta* in scalar additive contexts. *Ham* is predicted to be easily acquirable at this stage given that it has the same feature specification as their L1 additive operator *too*. However, given that at this stage the L2 learners presumably have mapped

their L1 representation of *even* onto *hatta* in Persian, namely by assuming that *hatta* is additive in prenominal position in Persian as well, one would expect that the L2 learners should wonder why they would need to express [ADD] on *ham* additionally when prenominal *hatta* have this component encoded already. This representation (*hatta-ham* combinations) should strike them as redundant, especially in cases where *hatta* appears in prenominal position. Therefore, the prediction at this stage is that the L2 learners fail to associate *ham* with the expression of [ADD] in the context of *hatta*, although the semantics of *ham* should have easily been established independently since it matches the one of their L1 additive operator. The intermediate learners, therefore, are predicted to fail at learning the L2 strategy of expressing [ADD] in scalar additive contexts.

Results for prediction (1): The results of the study reported do not support the first prediction. The L2 learners in this study do not show the L1 properties related to the syntax-semantics interaction of *even*, even at the mapping stage. They show no interaction between the syntax of *hatta* and its semantic content. It could be concluded, therefore, that noticing that the L2 does not use their L1 strategy to express [ADD] covertly seems to be an easy task. This I believe could be explained as a result of the abundant and obvious use of the additive operator in the Persian input to encode [ADD] in combination with *hatta* in scalar additive contexts. Having learned *ham* independently, the L2 learners would plausibly wonder why *ham* would be used in addition to *hatta* (specially prenominal *hatta*), had *hatta* indeed encoded the additive component lexically in Persian. This would trigger reassembly at very early stages and trigger the unlearning of the L1 covert expression of [ADD]. This is not a difficult task for the L2 learners because even the

intermediate learners succeed at dissociating the expression of [ADD] with the syntactic position of *hatta*.

Results for prediction (2): Results from the study reveal that this prediction is borne out. Although the L2 learners at this stage have successfully unlearnt their L1 strategy (covertly expressing [ADD]) by not showing a syntax-context interaction in the L2 (as discussed in the results of prediction 1), they do not seem to have picked up the L2 strategy, either. They do not note the interaction between the presence of the additive operator *ham* and the expression of [ADD]. In summary, although the L2 learners successfully dissociate from the L1 covert an indirect expression of [ADD], they fail to acquire the L2 strategy of overtly and directly expressing it on the additive operator *ham.* According to the results, what the L2 learners do at this stage is they assume *hatta* is always additive, regardless of its syntactic position and regardless of the presence of the additive operator. Put differently, the L2 learners do not use the L1 covert and indirect strategy, but they do not use the L2 overt and direct strategy, either. They do express [ADD] by assuming that *hatta* always overtly but indirectly expresses [ADD]. I propose that the expression of [ADD] for the L2 learners at this stage is overt because they use a morphological item which has [ADD] encoded in its semantic representation. Further, this is an indirect expression of [ADD] because the primary function of *hatta* is [SCAL] and [ADD] is encoded as a secondary function of this particle. This seems to be an in-between representation they resort to at this stage. It must be pointed out that the learners, even at the mapping stage, show that the use of *ham* in combination with *hatta* is dispreferred overall compared to the use of *hatta* alone. This I take as an indication that they have learnt the semantic feature specification of *ham* (which matches their L1 *too*); what these L2ers fail at is integration of

this knowledge to the expression of ADD in scalar additive contexts where NSs would normally use *ham*.

4.5.1.2.2. *L1 English L2 learners of Persian:* Feature reassembly

Prediction (3): At later stages in acquisition, the L2 learners are expected to notice the L2 consistently uses *hatta-ham* combinations in scalar additive contexts, with *hatta* in both prenominal and postnominal positions. Further, in non-additive contexts, *hatta* alone is used. The L2 learners should in principle note at this stage that had *hatta* encoded an additive component, it should have been inconsistent with contexts that do not satisfy the additive presupposition, especially in prenominal position. But, unlike their L1, the L2 does allow both prenominal and postnominal occurrences of *hatta* alone in non-additive contexts. This inconsistency should trigger the process of feature reassembly. I believe that the L2 learners at this stage do realize that the L1 syntax-context interaction does not hold in Persian. Having been exposed to sufficient positive input, they should be able to conclude that since the L2 prevalently uses *hatta-ham* combinations in additive contexts (in prenominal position, too) and does not use them in non-additive contexts; the string should have been redundant, had *hatta* encoded [ADD]. In summary, the advanced L2 learners were predicted to be able to notice the absence of their L1 covert and indirect expression of [ADD] in the L2.

Results for prediction (3): This prediction was indeed borne out. As discussed in the results of prediction (1), even intermediate L2 learners succeeded in noticing the absence of the L1 covert and indirect strategy of expressing [ADD] in the L2 and do not show properties of the L1 strategy in the L2. Therefore, the conclusion is that the unlearning of the covert and

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indirect feature [ADD] does not pose great difficulty to the L2 learners. This result suggests that once a learner is sensitive to a syntax-semantic constraint in their L1, it is easy for them to detect whether or not the same constraint exists in the L2. If the L2 fails to show L1 properties with respect to that constraint, dissociating from it does not pose great challenges in the L2 acquisition task.

Prediction (4): Having unlearnt the L1 covert and indirect expression of [ADD] through the syntactic constraint on *hatta,* besides having learnt the L2 additive operator, the prediction for the advanced L2 learners is that should be able to reassign the expression of [ADD] onto the target-like means of expressing it. Once the L2 learners have noticed that the L2 does not use their L1 strategy, the acquisition of the L2 expression of [ADD] through overtly and directly encoding it on *ham* should not present the L2 learners with great difficulty. Feature reassembly should be successful. The advanced L2 learners are predicted to accept *hatta-ham* configurations in additive contexts, reject them in non-additive contexts, and accept *hatta* alone in contexts that do not satisfy the additive presupposition.

Results for prediction (4): This prediction is not borne out in the results. Even the advanced L2 learners of Persian fail to reassign the expression of [ADD] onto the lexical item *ham*. While the L2 learners have succeeded in dissociating from their L1 strategy for expressing [ADD], they fail to acquire the overt and direct means of expressing the same feature in the L2 even at advanced levels, hence unsuccessful reassembly.

4.5.2.1. L1 Persian

The NSs results from Persian speakers confirm the predictions made in this study about the expression of [ADD] in Persian.

First, it was predicted that *hatta* does not encode [ADD] in its lexical specification. This prediction was borne out as the presence of *hatta* is compatible with contexts that satisfy the additive presupposition as well as contexts that do not. Had it encoded [ADD], its use should have been rejected in non-additive contexts. This prediction was supported in both syntactic positions of *hatta*, prenominal and postnominal, suggesting that this particle is not specified for [ADD] in either position. This confirms that the semantics of *hatta* does not interact with its syntactic position in Persian.

Further, it was shown that *hatta-ham* combinations have a semantic component that makes their use inconsistent with non-additive contexts, regardless of where *hatta* is with respect to the NP it associates with. These combinations are highly rejected in contexts that do not satisfy the additive presupposition suggesting the presence of and additive component in *hatta-ham* strings. The additive operator *ham* was concluded to be expressing [ADD] in *hatta-ham* combinations. *Hatta-ham* combinations are accepted in scalar additive contexts consistent with the prediction of Maximize Presupposition.

In summary, the expression of [ADD] in scalar additive contexts in Persian was shown to be overt and direct through the use of the additive operator *ham* in combination with *hatta*.

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4.5.2.2. L2 English

4.5.2.2.1. *L1 Persian L2 learners of English:* Feature mapping

The L2 learners start L2 acquisition with feature representations from their L1. Given the Persian L2 learners of English are taught that *even* is the equivalent of their L1 *hatta* and based on the Persian L1 results discussed earlier, the following predictions were formulated for the mapping stage of the L2 learners of English. For each prediction, results and discussion is provided.

Prediction (5): It was predicted that the L1 Persian L2 learners of English would map the semantic configuration of *hatta* onto *even* at this stage. Therefore, *even* would be assumed to not encode [ADD] and be accepted in both additive and non-additive syntactic positions.

Results for prediction (5): This prediction was borne out. Assuming that the intermediate L2 learners are still at the stage of feature mapping, their performance indicated that, *even* is only scalar and does not encode [ADD] because it is equally accepted in both contexts.

Prediction (6): It was predicted that the L2 learners of English at this stage, would not show a syntax-context ineraction for *even*, given that the semantic configuration of their L1 *hatta* is not sensitive to its syntactic position. *hatta* is not additive in either prenominal or postnominal position.

Results for prediction (6): This prediction was also borne out. Persian intermediate L2 learners of English did not show a syntax-context interaction and treated the L2 *even* the

same in both prenominal and postnominal position. This was the case both for *even* and *even-too* strings.

Prediction (7): As L2 learners at the mapping stage transfer their L1 representations on to the closest/same L2 feature sets, the acquisition of the L2 additive operator *too* was predicted to be successful at this stage, given that it has the same feature specification as the L1 *ham.* Both encode [ADD] and are not specified for scalarity. Assuming that the L2 learners at this stage still map *hatta* onto *even,* in principle, it was predicted that they would accept *even-too* combinations in scalar additive contexts, reject them in scalar non-additive contexts, and accept *even* in both additive and non-additive contexts.

Results for prediction (7): Prediction (7) was also borne out. Intermediate L2 learners of English did reveal patterns predicted by their L1 properties. They showed great preference for *even-too* combinations in additive contexts, rejected them in non-additive contexts and accepted *even* alone in both additive and non-additive contexts.

4.5.2.2.2. *L1 Persian L2 learners of English:* Feature reassembly

As it was shown above, at the mapping stage, intermediate L1 Persian L2 learners of English strongly demonstrated L1 properties in the L2, which are not consistent with the target representations. Based on the FRH, one would predict that at more advanced stages, L2 learners would notice the discrepancy between the L1 representations and those of the L2 through positive input. Feature reassembly is predicted to happen in cases of inconsistency with the target representations and difficulty and delay in acquisition are predicted. Based on these assumptions, the following predictions were formulated for the

reassembly stage of L2 acquisition for L1 Persian L2 learners of English in the present study.

Prediction (8): At later stages in acquisition, the task of the English L2 learner is to notice inconsistencies of the L2 representations with those of their L1. The first inconsistency is that, unlike their L1, the L2 does not use the additive operator to encode [ADD] in scalar additive contexts. L2 learners should unlearn their L1 overt and direct expression of [ADD]. They need to disassociate the expression of [ADD] from the lexical item *too*. The dissociation of [ADD] from *too* in scalar additive contexts was predicted to be a difficult task for the L2 learners because it is not entirely motivated; *too* has the same semantic specification as *ham* and is used in very similar (possibly same) contexts across both languages, independently. I believe that as an L2 learner, unless explicitly instructed that in a particular context (in the context of *even*, scalar additive contexts) they should not use the additive operator because [ADD] is encoded differently (constrained by syntax) in the L2, in other words unless exposed to negative input, the L2 learner would generalize the use of the additive operator in any context that satisfies the additive presupposition. Dissociating from this, I predict, is not easy and presents a challenge to the L2 learners even at higher levels of proficiency.

Results for prediction (8): The results reported in this study do support this prediction: Neither intermediate nor advanced learners show lower acceptance rates for the presence of *too* in scalar additive contexts in English suggesting that they have failed to unlearn the L1 strategy by dissociating the expression of [ADD] from *too* in scalar additive contexts.

Prediction (9): I further predicted that it would be difficult for the L2 learners to learn the syntactic constraint on the expression of [ADD] on *even*. This learning task involves noticing that in a very particular syntactic position (prenominal), *even*, encodes the additive presupposition which is otherwise overtly (and easily) expressed in their L1. To learn this constraint, the L2 learner would require to specifically notice in the L2 input that prenominal *even* is not used in non-additive contexts. Other positive input, e.g. postnominal *even* in additive and non-additive contexts or prenominal *even* in additive contexts, do not convey this constraint to the L2 learner because these uses of *even* are all expected to be fine. Therefore, once again, I believe that unless explicitly instructed, the acquisition of this constraint should be extremely difficult for the L2 learners.

Results for prediction (9): The results of the present study confirm this prediction. Even at higher levels of proficiency, L1 Persian L2 learners of English fail to acquire the syntactic constraint on the expression of [ADD] on *even*. In other words, they fail to acquire the target strategy for the expression of [ADD], the covert and indirect encoding of [ADD] on *even* in English.

In the next chapter, interpretation of the results as well as implications will be discussed and the research questions of the present research will be addressed.

CHAPTER 5

CONCLUSION

5.1. Introduction

The aim of the present dissertation was to contribute new empirical evidence to the understanding of L2 acquisition tasks and potential challenges L2 learners face in acquisition as understood in terms of the FRH. In chapter 4, results of an experimental investigation of the semantic systems used in English and Persian, both by NSs and L2 learners, for expressing [ADD] in scalar additive contexts associated with *even* were reported. The goal of this chapter is to further discuss these findings in light of the research questions formulated in chapter 4. I will mainly focus on the bigger question of how the L1 plays out in L2 acquisition within the framework of the present research, the FRH; how the feature encoding system of the native language affects L2 development.

5.2. Summary and discussion of main findings

One of the premises of the FRH is to account for persistent variability in L2 acquisition. This hypothesis challenges the parameter resetting models of acquisition which fail to explain persistent variability in L2 interlanguage grammars because parameter resetting is viewed as an all-or-nothing phenomenon which, in principle, cannot predict variability in L2 interlanguage. The FRH, however, views persistent variability as a consequence of the learning problems L2 learners face due to the different feature configurations between languages and the complexity of the task of remapping L1 feature matrices onto those of the target language.

Generative SLA research has widely addressed the question of the extent to which L1 knowledge is involved in the development of adult L2 grammars. Within this research, the FRH, following in the steps of Lado's Contrastive Analysis (1957), focuses on the similarities and differences between the L1 and the L2 which can potentially aid or obstruct L2 acquisition. Features are assumed in this theory as the basic components for comparing the formal properties between the L1 and L2 (Lardiere 2009). The L2 learner then starts off by mapping the most similar L1 feature bundles onto the L2, the mapping stage, and gradually reconfiguring into L2 feature organizations by deleting, adding, and/or substituting features, the reassembly stage. This feature-based analysis allows for making specific predictions about the factors that present L2 learners with complications in L2 acquisition which could result in divergence from target-like performance.

As pointed out by White (2009), the predictive power of the FRH in establishing which features or which sort of feature reassembly affect difficulties L2 acquisition

requires empirical investigation. Research within the FRH, therefore, should contribute to the predictive power of the theory by establishing the inventory of factors that influence L2 acquisition. The present study was designed to pursue this goal. The FRH was investigated by focusing on the L2 acquisition of a new linguistic property: a semantic feature responsible for the additive presupposition associated with *even*, [ADD]. This study also considers a new language combination, Persian and English, and focuses on the acquisition on the semantic feature in question in both L2 directions. Focus was on the different ways of encoding [ADD] in these languages, as a source of difficulty in L2 acquisition which triggers feature reassembly. This study builds on previous research on L1 transfer by conceptualizing the lingering influence of L1 in FRH terms, and investigating the acquisition of overt and direct versus covert and indirect features in L2 when the L1 systems work differently. Below, a summary of the findings of the present study is provided in light of the research goals of the thesis.

5.2.1. Research goal 1:

The expression of the semantic components associated with *even*, [SCAL] and [ADD], in English and Persian

One of the research goals in this study was to establish what strategies are used in L1 English and Persian to encode the semantic features [SCAL] and [ADD], which have been discussed in the literature as the components *even* makes reference to. In the present study, focus was on [ADD] as the controversial semantic component and [SCAL] was assumed as the primary semantic component of *even* and *hatta* in both English and Persian. Therefore, this question was limited to the ways [ADD] is expressed in these two languages.

Experimental results confirmed that in Persian, *hatta* is not specified for additivity. In other words, although compatible with use in additive contexts, this particle does not trigger an additive presupposition and is only responsible for the scalar presupposition. Therefore, [SCAL] is concluded to be an overt and direct feature on *hatta*. In addition, the semantics import of this particle does not depend on its syntactic position which implies the absence of a syntax-semantics interaction. As for the expression of [ADD], the results indicated that Persian uses the additive operator *ham* in the structure to signal this component; in other words, [ADD] is an overt and direct feature specification on *ham*.

In English, it was assumed that [SCAL] is directly and overtly encoded on *even.* As for the expression of [ADD], although the statistical results revealed the predicted pattern, which is through a syntax-semantics interaction suggesting that *even* lexically encodes [ADD] in prenominal position, the results do not strongly support the prediction about the use of postnominal *even* in non-additive contexts. Let us review the results in the plot below.
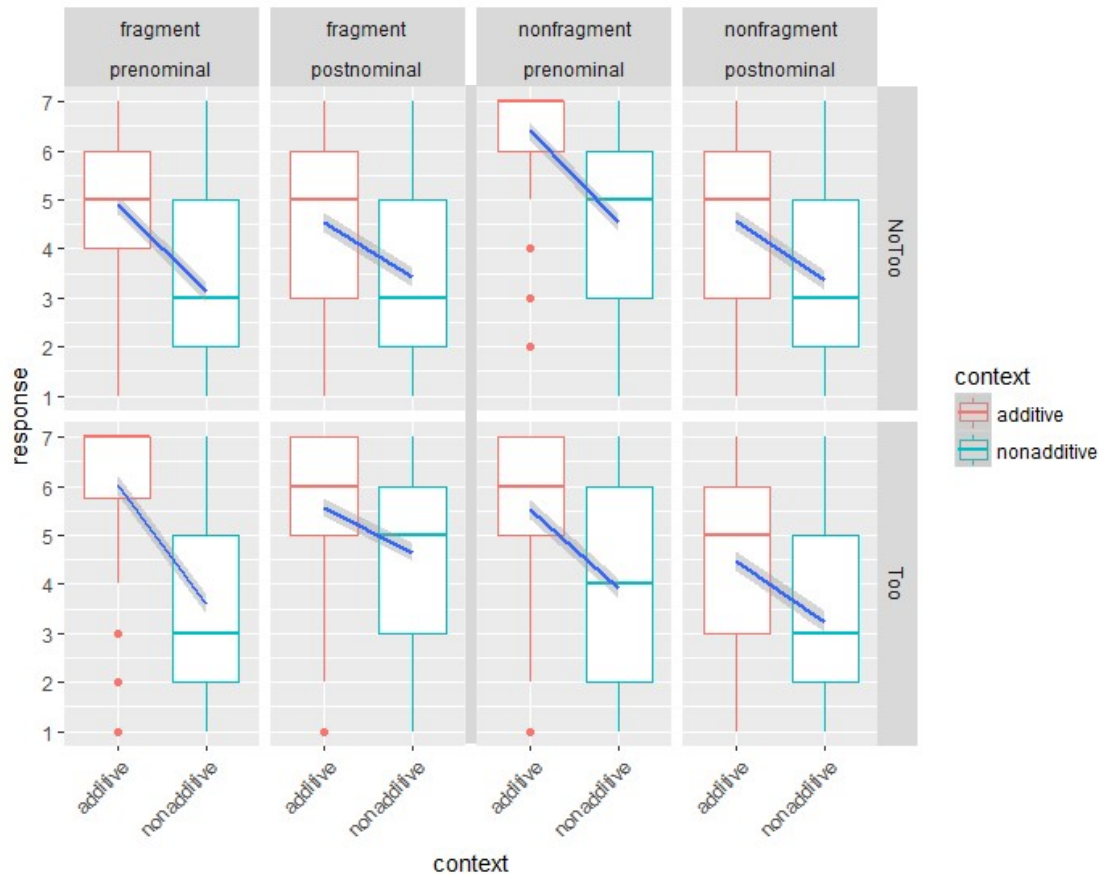
Figure (5.2). Felicity rating for the NSs of English; by *type, syntax, context, presenceToo*

NSs of English, unlike the pilot results from chapter 2, do not accept the use of *even* in postnominal positions in non-additive contexts as highly as predicted. This, however, I attribute to a general dislike native speakers have for postnominal placement of *even* and its use in non-additive contexts which could affect the speakers' judgement. Admittedly, both the use of *even* postnominally and in non-additive contexts are relatively rare in natural language compared to other conditions in this study. Therefore, I conjecture that in a disfavoured condition (postnominal and non-additive), speakers might just be construing *even* association differently, in a way compatible with a more natural use, prenominal and additive use, which are conditions they have already been exposed to frequently in natural

language and in the tasks in the current study. In fact, their ratings for postnominal *even* in non-additive contexts do seem to replicate the low acceptance of prenominal *even* (except in one condition, where postnominal *even* is rated surprisingly high in the *Too* condition of the fragment experiments; this is an odd finding which I do not have an explanation for at this point).

Another unexpected finding for the NSs of English was that in the non-fragment version, they rated prenominal *even*, which shows the stronger additivity effect and presumably encodes [ADD], relatively high in non-additive contexts. Once again, I conjecture that this is the result of an alternative speakers resort to when they face a condition that they overall disfavour in natural language. In the non-fragment version, prenominal *even* would place *even* in front of an object NP. This position is highly marked in English. I suggest, in order to accommodate for this oddity, speakers construe pre-object *even* as VP-*even* which is compatible with both additive and non-additive interpretations of *even*. Therefore, speakers accept pre-object *even* in the non-fragments as VP-*even*, hence high acceptance rates in both additive and non-additive contexts.

In summary, I conclude that the results from NSs of English, do support the hypothesis that the semantics of *even* is constrained by its syntactic position. The additivity effect is best signalled in the prenominal use of *even* (especially in the fragment version). Therefore, I conclude that [ADD] is covertly and indirectly encoded in English.

Another possible interpretation of the results which may arise by looking at the plots might be that *even* is just additive across the board. One might think that *even* encodes [ADD] in all positions. This, I believe, is too strong of an interpretation. Looking at the many

examples from chapter 2, some repeated below, we do see, following reported NS intuitions, that *even* cannot be additive in all instances in English:

(5.1)   Bill *even* danced *only* with SUE.

(5.2)   A: Is Claire an ASSISTANT professor?

          B: No, she's *even* an ASSOCIATE professor.

(5.3)   A: Did Mary win bronze?

          B: No, she *even* won the SILVER medal.

(5.4)   A: Harold did a great job on the test!

          B: How did he do? Did he get a B?

          A: No, he *even* got an A!

(5.5)   Context: I heard the results of this year's marathon were surprising. Is it true that this time it wasn't a Kenyan who won the gold medal?

          a. Oh yes. # *Even* a CANADIAN won it

          b. Oh yes. A CANADIAN *even* won it.

(5.6)   Context: John was a favorite in the marathon. Did he win a medal?

          a. Oh yes. # John won *even* the GOLD medal.

          b. Oh yes. John *even* won the GOLD medal.

(5.7)   A: Did anyone solve the problem?

          B: #Yes. *Even* EVERYONE (did).

          B': Yes, EVERYONE *even* (did).

(5.8)   Context: What did we find out? Not much.

          a. # *Even* NOTHING.
          b. NOTHING, *even*.

These examples illustrate the importance of investigating the status of the additive presupposition associated with *even* perhaps more precisely than the investigation reported within the present thesis. As far as the results of the present thesis are concerned, however, I maintain that the unexpected results in this study are due to alternative processings of *even*, rather than *even* having an additive semantic specification across the board, which is the result of speakers construing this particle differently from its surface position in order to accommodate for the oddness of placing *even* in disfavoured syntactic (postnominal and pre-object) and contextual conditions (non-additive).

5.2.2. Research goal 2:

Sources of difficulty in L2 acquisition

Results of the present study have implications that facilitate the understanding of what is at the heart of the acquisition task that can make it difficult for L2 learners to acquire L2 representations. In particular, the findings of the present study from both L2 learner groups strongly highlight the role of L1 lingering effects (at different stages of proficiency) and identify the nature of the features being reconfigured (overt vs. covert, direct vs. indirect) as well as the process of integrating L2 strategies in expressing certain features as sources of difficulty in L2 acquisition. In the following, I will elaborate on these issues in more detail.

5.2.2.1. Overt and direct features in L2

One of the two learning directions in the present study was the acquisition of L2 Persian by NSs of English. Their learning task in the acquisition of the L2 was to reconfigure from their L1 feature configuration for [ADD] into that of L2 Persian. In other words, their task was to

dissociate from the covert and indirect specification for [ADD] in English and reassemble into the overt and direct expression of this semantic component in Persian.

The L2 learners of Persian demonstrated interesting behaviour. First, they learnt at fairly low proficiency levels, that the covert L1 specification for [ADD] is absent in the L2; they learnt that there is no contrast between prenominal and postnominal *hatta* in terms of their semantic import. This is interesting because it suggests that once the L1 has a covert strategy to encode some feature, detecting that the L2 fails to correspond to the L1 representation is not a difficult task. Second, upon realizing that the L1 and L2 representations do not match, reassembly occurs and they need to find a strategy to express [ADD]. I suggest that the L2 learners at this stage face two strategies to choose from, one of which is the L2 overt and direct expression of [ADD] through the use of the additive operator *ham*. Another possible strategy, which is the one the L2 learners opt for in this study, is to transfer a meaning of L1 *even* for *hatta* which is semantically stronger, the additive meaning (the reading of *even* with the additive presupposition is stronger than when it does not have the additive presupposition as it is more informative, noteworthy, and/or relevant). They treat *hatta* as additive in all conditions, including different syntactic positions. I believe that in order to adhere to Maximize Presupposition, the L2 learners favour encoding [ADD] indirectly on *hatta*, over directly expressing it on a different lexical item because the former strategy is already available to them in their L1 where prenominal use of *even* indirectly signals [ADD].

These learners did not succeed at acquiring the L2 strategy which is by lexically expressing [ADD] on *ham*; they failed to recognize that in scalar additive contexts that license the use of prenominal *even* in their L1, Persian uses an overt and direct realization

of both semantic components: [SCAL] is lexicalized on *hatta* and [ADD] on *ham*. The L2 learners of Persian assumed that [ADD] is lexicalized overtly and indirectly on *hatta* in Persian; overtly because it is lexicalized and indirectly because it is the secondary meaning of *hatta* besaides [SCAL] which is its primary semantic function. As a result, the L2 learners disfavour the use of *ham* in addition to *hatta*, as the use of an additive operator besides a lexical item that already signals [ADD] strikes them as redundant.

I suggest that the challenge in L2 acquisition for them is not the acquisition of the additive operator *ham*. In fact, this particle has the same feature specification of their L1 additive operator *too* and is very easily acquirable at the mapping stage. What these L2 learners fail at, is integration of the knowledge that [ADD] can be realized directly on a different morpheme in scalar additive contexts when their L1 makes available to them a more familiar strategy, an indirect way.

In conclusion, results of the present study indicate that once the L1 uses a covert and indirect means of expressing a feature, here [ADD], it is easy to dissociate from the covert strategy and learn that the L1 syntactic constraint is not present in the L2. It is difficult, however, for L2 learners to learn an overt and direct feature specification of it in the target language when their L1 has an indirect way of expressing it.

5.2.2.2. Covert and indirect features in L2

The other learning direction in this thesis was the L2 acquisition of English by NSs of Persian. Both intermediate and advanced groups in this study demonstrated strong L1 properties in the L2 with respect to the expression of [ADD]. They fail to unlearn the L1 overt and direct strategy of encoding [ADD] which is by using the additive operator *ham* and show the biggest additivity effect when *too* is present in combination with *hatta*, the

strategy transferred from their L1. I believe that the reason behind this is that since the L2 has an operator (*too*) that has the same feature specification as their L1 additive operator, the L2 learners would wonder why dissociate from their L1 *ham* when the L2 has the same morpheme that they can use in the same context as their L1 to express the same semantic feature.

Further, they transfer the feature specification for their L1 *hatta* which is only specified for [SCAL] and correspond it to *even* in English. When used alone, *even* does not encode [ADD] at all for the L2 learners unlike target *even* which covertly encodes [ADD] in prenominal position. Therefore, they fail to acquire the covert and indirect specification of [ADD] in English even at higher levels of proficiency.

The conclusion from this is that it must be a challenging task for L2 learners to dissociate from an L1 overt and direct feature and reassemble into a covert and indirect feature specification, especially given that the L2 offers an overt lexical item which matches in feature specifications that of the L1 and is easily acquirable at early stages of acquisition, as such.

5.3. Contributions

From a semantic theory perspective, the present study investigates the semantics of focus-sensitive presupposition trigger *even* in English, where there is much debate on this topic, and in Persian, where to the best of my knowledge, no study has been done on the semantics of the particles *hatta* and *ham*. Furthermore, from an L2 acquisition perspective, as discussed in section 5.2, one goal of the present research was to contribute to the predictive power of the FRH by showing which feature/feature combinations are in

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principle more difficult for L2 learners to acquire. Cho and Slabakova (2014) have offered a schematic cline of difficulty, as shown below.
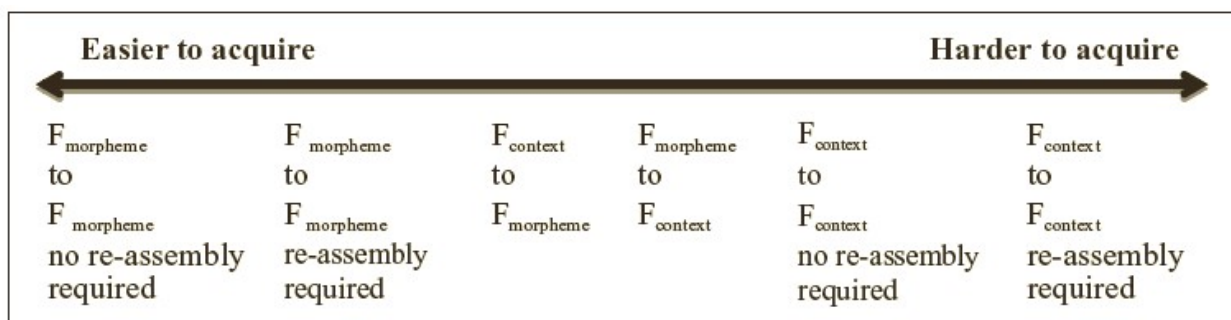
Figure (5.3). Cline of difficulty in feature acquisition (from Cho and Slabakova 2014)

This scheme represents both lexically expressed feature expression ($F_{morpheme}$) as well as contextually/syntactically constrained feature expression ($F_{context}$) and makes the following predictions:

1) L2 acquisition is easiest when both L1 and L2 use a lexical system of feature expression and no feature reassembly is required.

2) L2 acquisition is more challenging when both L1 and L2 use a lexical system of feature expression but some feature reassembly is required.

3) L2 acquisition is less complicated if reassembly has to occur from an L1 contexually/syntactically constrained system of feature expression onto a lexical system than the other direction (going from an L1 lexical system to an L2 contextual/syntactic system is more challenging).

4) L2 acquisition is most difficult when both languages use a contextual/syntactic system of feature expression and even more so when reassembly is required.

In the present thesis, the two learning directions in consideration tested the third prediction as outlined above: L2 acquisition of the Persian lexical system of expressing the

additive presupposition by English speakers whose L1 uses a contextual/syntactic system and L2 acquisition of the English contextual/syntactic system by Persian speakers whose L1 uses a lexical system. The findings here shed light on the predictive power of the FRH by confirming this prediction: While L1 English L2 learners of Persian showed some success in the acquisition of the target system (they learned the absence of the syntactic constraint on the L2 expression of the additive presupposition in Persian), the L1 Persian L2 learners of English failed to show any success at converging on the L2 contextual/syntactic system of expressing the additive presupposition, suggesting that this latter direction of acquisition is more challenging.

The present study contributes to the theoretical understanding of the semantics of *even* in English by experimentally confirming that the expression of the additive presupposition of *even* is constrained by its syntactic position. In addition, this thesis contributes to the L2 literature on syntax-semantics properties in L2 by investigating the L2 acquisition of the expression of the additive presupposition of *even* in English which lies at the syntax-semantics interface[1]. While majority of the literature on the L2 acquisition of properties at the syntax-semantics interface has shown that L2 learners are "perfectly capable of acquiring" (Slabakova 2006, p. 332) syntax-semantics properties (see Dekydtspotter & Sprouse 2001, Slabakova 2001, Montrul & Slabakova 2002, among others), the findings of the present study indicate that adult learners failed at the acquisition of the syntax-semantics properties of *even* in English. Even advanced L2 learners of English did not show any target-like patterns. Consistent with Cho and

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[1]Existing work on scalar implicatures (see Slabakova 2010) tests the L2 acquisition of scalar implicatures as a semantics-discourse interface property. The present study, however, investigates the expression of the additive presupposition of *even* as a property which lies at the syntax-semantics interface.

Slabakova (2014, 2015), where they investigated L2 acquisition of definiteness and specificity as semantic features, I suggest that the source of difficulty in the L2 acquisition of semantic features lies in the process and kind of *feature reassembly* involved.

5.4. Limitations, implications, and future research

The results of the present study are naturally subject to some limitations. As discussed earlier, some of the unexpected results in the results from NSs of English, e.g. low rating for postnominal *even* in non-additive contexts and high acceptance rate for pre-object *even* in the non-fragment version of the experiments, were attributed to the different construals for focus association of *even* giving rise to different processing options for this particle. I suggest that, in principle, this problem could be avoided if one tested pre- and post *subject* placements of *even*. The decision to test object-*even* in the present research was due to the particular difficulty of constructing test items with subject-*even* appearing in additive and non-additive contexts. In addition, given that each experimental task consisted of 8 conditions in its design, including another variable (subject vs. subject) would have made the experimental tasks really long and arduous, a situation to be avoided as much as possible. Therefore, one of the next steps for future research would be to think about ways to improve the design such that subject association could be tested as well.

Alternatively, one could consider only fragment sentences for future research and exclude non-fragments which were shown to give rise to unexpected results in English. The decision to include both fragments and non-fragments was based on my personal intuition that fragment responses, equivalent to the English ones, are odd in Persian. On the other hand, non-fragments were reported to be odd in English due to the placement of *even*

before object. To compromise, I decided to include both types in the present study. However, the results indicated that the fragment data are not statistically different from the non-fragment version in Persian at least. Therefore, for future research, I believe it is safe to include only fragments and control for other effects more precisely.

Further, the NS results reported in this study are from participants who served as the L2er groups as well (100% of the 42 speakers of Persian knew English and 66% of the 30 non-L2er NSs of English knew one (or more) languages at different levels of proficiency). This, in principle, can affect the overall results obtained since possible transfer sources were not properly controlled for. Ideally, as a future idea, I would include a third group in each learning direction of only monolingual speakers, although it might not be easy to find enough monolingual profiles. Note, on the side, that the pilot results in chapter 2, which revealed less of unexpected patterns, were from monolinguals of English.

The present research has potential implications for language pedagogy. Would it help L2 learner performance if they received positive and/or negative evidence in classrooms regarding the acquisition of overt and direct versus covert and indirect systems of encoding features? In other words, would it be helpful if a language instructor makes explicit the presuppositional contribution of focus-sensitive particles like *even*, *hatta*, and *ham* and instructs the learners what aspects of meaning would change in which particular contexts? These of course are very subtle aspects of meaning which, as shown, are not easy to acquire even for advanced learners. Based on the findings in the present research, I predict that integration of explicit instructions in classroom environments should improve L2 learner performance on the acquisition of the semantic features in question since L2

learners have no way of knowing about the semantic content of the relevant particles from merely positive evidence. An investigation of this question requires periodic testings of advanced/near-native speakers of an L2, which is an interesting research idea for future.

Related to the insufficiency of positive evidence, the question can be raised as to how first language acquirers acquire the semantic content of these particles (given the poverty of stimulus). For instance, how does an L1 English child come to acquire the syntax-semantic constraint on the additive presupposition of *even* when they have very limited/no exposure to this knowledge in the L1. While it would presumably be extremely difficult to test these properties on children, I conjecture that the child starts out with the stronger meaning of *even* (additive) and gradually retreats from the additive interpretation in certain syntactic environments as their "innate language faculty aids the learners through constraining their hypothesis space" (Slabakova 2016) about the semantics of this particle. I suspect that the child can hypothesize, based on the fact that they do not see in input instances of prenominal *even* used in non-additive contexts while postnominal *even* does appear in such contexts, that there must be something in the meaning of even in prenominal position that blocks it from use in non-additive contexts (i.e. the additive component). Therefore, gradually they would *dissociate* the additive component from their representation for *even* in prenominal position. An L1 Persian child, however, starts out with the L1 non-additive interpretation and never learns that it could sometimes be additive in the L2, as the findings here indicate.

Finally, I believe that different language combinations can be used of possibly three languages two of which (L1s) use different systems of encoding a specific feature from the

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third (the L2). Comparison of the performance of the two learner groups with respect to the acquisition of the L2 system can provide further insights for a better understanding of what aspects of the L1 can potentially ease or obstruct feature reassembly.

5.4. Final remarks

To conclude, this thesis sought to explore the L2 acquisition of the additive presupposition related to *even* in L2 English and Persian. First, it was established that these languages choose two different (possibly opposite) systems to encode the additive presupposition associated with *even*: English encodes the additive presupposition as a covert and indirect feature and Persian does so through overtly and directly lexicalizing this semantic component. This provided an interesting language combination to test the predictions of the FRH with respect to the role L1 transfer plays in L2 acquisition. Second, performance of L2 learners was examined at two different proficiency levels, intermediate and advanced, which allowed the investigation of the L2 learner performance at both the mapping and reassembly stages of the FRH. The first learner group, L1 English L2 learners of Persian, demonstrated that when the L1 encodes a semantic component as a covert and indirect feature, the reconfiguration into an overt and direct system of encoding the same feature presents some challenge to the L2 learners. To dissociate from the covert encoding of the additive presupposition and noting that the L2 does not use the same system proved to be an easy task, given that even the intermediate learners were able to notice the absence of an interaction between the syntax and semantics of *hatta* in Persian. Further, rather than acquiring the target strategy to encode this component, the L2ers opted for an L1 alternative strategy, already available to them through transfer, by adopting a indirect

feature specification for the additive presupposition for *hatta*: They treated all instances of *hatta* as identical to prenominal *even* which encodes the additive presupposition as a secondary semantic function (besides the scalar presupposition). Even the advanced learners failed to acquire the L2 feature configuration for the additive presupposition. The second learner group, L1 Persian L2 learners of English, showed that when the L1 has an overt and direct system of encoding the additive presupposition, it was difficult to dissociate from this system in favour of acquiring a covert and indirect system. This was especially the case since the L1 and L2 had matching morphemes to express the additive presupposition independently of *even* (in pure additive contexts).

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Appendix A

Experimental material used in the pilot study:

English fragments (72 items)

theme	context	context story	additional remark	syntax	Presence Too	condition
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Even Obama.	prenominal	NoToo	1
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Even Obama.	prenominal	NoToo	2
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Obama, even.	postnominal	NoToo	3
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Obama, even.	postnominal	NoToo	4
1	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Even Obama, too.	prenominal	Too	5
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Even Obama, too.	prenominal	Too	6
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Obama too, even.	postnominal	Too	7
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Obama too, even.	postnominal	Too	8

	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Even Isaac.	prenominal	NoToo	1
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other student to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Even Isaac.	prenominal	NoToo	2
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Isaac, even.	postnominal	NoToo	3
2	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other student to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Isaac, even.	postnominal	NoToo	4
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Even Isaac, too.	prenominal	Too	5
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other student to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Even Isaac, too.	prenominal	Too	6
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Isaac too, even.	postnominal	Too	7

	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other student to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Isaac too, even.	postnominal	Too	8
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Even Gary Kasparov.	prenominal	NoToo	1
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Even Gary Kasparov.	prenominal	NoToo	2
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Gary Kasparov, even.	postnominal	NoToo	3
3	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Gary Kasparov, even.	postnominal	NoToo	4
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Even Gary Kasparov, too.	prenominal	Too	5
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Even Gary Kasparov, too.	prenominal	Too	6
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Gary Kasparov too, even.	postnominal	Too	7
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Gary Kasparov too, even.	postnominal	Too	8
4	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Even Qatar.	prenominal	NoToo	1

	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Even Qatar.	prenominal	NoToo	2
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Qatar, even.	postnominal	NoToo	3
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Qatar, even.	postnominal	NoToo	4
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Even Qatar, too.	prenominal	Too	5
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Even Qatar, too.	prenominal	Too	6
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Qatar too, even.	postnominal	Too	7
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Qatar too, even.	postnominal	Too	8
5	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	Even a university professor.	prenominal	NoToo	1
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	Even a university professor.	prenominal	NoToo	2
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	A university professor, even.	postnominal	NoToo	3
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	A university professor, even.	postnominal	NoToo	4

	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	Even a university professor, too.	prenominal	Too	5
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	Even a university professor, too.	prenominal	Too	6
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	A university professor too, even.	postnominal	Too	7
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	A university professor too, even.	postnominal	Too	8
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	Even an A+.	prenominal	NoToo	1
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade.	Even an A+.	prenominal	NoToo	2
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	An A+, even.	postnominal	NoToo	3
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade.	An A+, even.	postnominal	NoToo	4
6	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	Even an A+, too.	prenominal	Too	5
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade.	Even an A+, too.	prenominal	Too	6
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	An A+ too, even.	postnominal	Too	7
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade.	An A+ too, even.	postnominal	Too	8

	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. I said I did. But in fact I had some better cards in my hand.	Even an ace.	prenominal	NoToo	1
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	Even an ace.	prenominal	NoToo	2
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. I said I did. But in fact I had some better cards in my hand.	An ace, even.	postnominal	NoToo	3
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	An ace, even.	postnominal	NoToo	4
7	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. I said I did. But in fact I had some better cards in my hand.	Even an ace, too.	prenominal	Too	5
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	Even an ace, too.	prenominal	Too	6
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. I said I did. But in fact I had some better cards in my hand.	An ace too, even.	postnominal	Too	7
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	An ace too, even.	postnominal	Too	8
8	additive	Everyone on the Dutch speed skating team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	Even a gold medal.	prenominal	NoToo	1
	nonadditive	Each member of the Dutch speed skating team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	Even a gold medal.	prenominal	NoToo	2

	additive	Everyone on the Dutch speed skating team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	A gold medal, even.	postnominal	NoToo	3
	nonadditive	Each member of the Dutch speed skating team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	A gold medal, even.	postnominal	NoToo	4
	additive	Everyone on the Dutch speed skating team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	Even a gold medal, too.	prenominal	Too	5
	nonadditive	Each member of the Dutch speed skating team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	Even a gold medal, too.	prenominal	Too	6
	additive	Everyone on the Dutch speed skating team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	A gold medal too, even.	postnominal	Too	7
	nonadditive	Each member of the Dutch speed skating team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	A gold medal too, even.	postnominal	Too	8
9	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	Even a six.	prenominal	NoToo	1
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the highest number would win. I was first and I rolled a high number.	Even a six.	prenominal	NoToo	2
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	A six, even.	postnominal	NoToo	3
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the highest number would win. I was first and I rolled a high number.	A six, even.	postnominal	NoToo	4
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	Even a six, too.	prenominal	Too	5

	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the highest number would win. I was first and I rolled a high number.	Even a six, too.	prenominal	Too	6
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	A six too, even.	postnominal	Too	7
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the highest number would win. I was first and I rolled a high number.	A six too, even.	postnominal	Too	8

Experimental material used in the present dissertation

B1- English fragments (72 items)

theme	context	context story	additional remark	syntax	presence Too	condition
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Even Obama.	prenominal	NoToo	1
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Even Obama.	prenominal	NoToo	2
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Obama, even.	postnominal	NoToo	3
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Obama, even.	postnominal	NoToo	4
1	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Even Obama, too.	prenominal	Too	5
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Even Obama, too.	prenominal	Too	6
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	Obama too, even.	postnominal	Too	7
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	Obama too, even.	postnominal	Too	8

	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Even Isaac.	prenominal	NoToo	1
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Even Isaac.	prenominal	NoToo	2
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Isaac, even.	postnominal	NoToo	3
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Isaac, even.	postnominal	NoToo	4
2	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Even Isaac, too.	prenominal	Too	5
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Even Isaac, too.	prenominal	Too	6
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	Isaac too, even.	postnominal	Too	7
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	Isaac too, even.	postnominal	Too	8

3	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Even Gary Kasparov.	prenominal	NoToo	1
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Even Gary Kasparov.	prenominal	NoToo	2
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Gary Kasparov, even.	postnominal	NoToo	3
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Gary Kasparov, even.	postnominal	NoToo	4
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Even Gary Kasparov, too.	prenominal	Too	5
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Even Gary Kasparov, too.	prenominal	Too	6
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	Gary Kasparov too, even.	postnominal	Too	7
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	Gary Kasparov too, even.	postnominal	Too	8
4	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Even Qatar.	prenominal	NoToo	1
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Even Qatar.	prenominal	NoToo	2
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Qatar, even.	postnominal	NoToo	3
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Qatar, even.	postnominal	NoToo	4
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Even Qatar, too.	prenominal	Too	5

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	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Even Qatar, too.	prenominal	Too	6
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	Qatar too, even.	postnominal	Too	7
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	Qatar too, even.	postnominal	Too	8
5	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	Even a university professor.	prenominal	NoToo	1
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	Even a university professor.	prenominal	NoToo	2
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	A university professor, even.	postnominal	NoToo	3
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	A university professor, even.	postnominal	NoToo	4
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	Even a university professor, too.	prenominal	Too	5
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	Even a university professor, too.	prenominal	Too	6
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	A university professor too, even.	postnominal	Too	7
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	A university professor too, even.	postnominal	Too	8
6	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	Even an A+.	prenominal	NoToo	1
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	Even an A+.	prenominal	NoToo	2
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	An A+, even.	postnominal	NoToo	3
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	An A+, even.	postnominal	NoToo	4

	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	Even an A+, too.	prenominal	Too	5
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	Even an A+, too.	prenominal	Too	6
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	An A+ too, even.	postnominal	Too	7
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	An A+ too, even.	postnominal	Too	8
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	Even an ace.	prenominal	NoToo	1
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. But the only card I had was higher.	Even an ace.	prenominal	NoToo	2
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	An ace, even.	postnominal	NoToo	3
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. But the only card I had was higher.	An ace, even.	postnominal	NoToo	4
7	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	Even an ace, too.	prenominal	Too	5
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. But the only card I had was higher.	Even an ace, too.	prenominal	Too	6
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	An ace too, even.	postnominal	Too	7
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. But the only card I had was higher.	An ace too, even.	postnominal	Too	8

8	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	Even a gold medal.	prenominal	NoToo	1
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	Even a gold medal.	prenominal	NoToo	2
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	A gold medal, even.	postnominal	NoToo	3
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	A gold medal, even.	postnominal	NoToo	4
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	Even a gold medal, too.	prenominal	Too	5
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	Even a gold medal, too.	prenominal	Too	6
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	A gold medal too, even.	postnominal	Too	7
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	A gold medal too, even.	postnominal	Too	8
9	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	Even a six.	prenominal	NoToo	1
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	Even a six.	prenominal	NoToo	2
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	A six, even.	postnominal	NoToo	3
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	A six, even.	postnominal	NoToo	4
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	Even a six, too.	prenominal	Too	5

	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	Even a six, too.	prenominal	Too	6
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled good numbers.	A six too, even.	postnominal	Too	7
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	A six too, even.	postnominal	Too	8

B2- English non-fragments *NoToo* (54 items)

theme	context	context story	additional remark	syntax	presence Too	condition
1	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She even saw Obama.	VP	NoToo	1
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She even saw Obama.	VP	NoToo	2
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She saw even Obama.	prenominal	NoToo	3
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She saw even Obama.	prenominal	NoToo	4
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She saw Obama, even.	postnominal	NoToo	5
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She saw Obama, even.	postnominal	NoToo	6
2	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She even hugged Isaac.	VP	NoToo	1

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	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She even hugged Isaac.	VP	NoToo	2
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She hugged even Isaac.	prenominal	NoToo	3
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She hugged even Isaac.	prenominal	NoToo	4
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She hugged Isaac, even.	postnominal	NoToo	5
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She hugged Isaac, even.	postnominal	NoToo	6
3	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He even defeated Gary Kasparov.	VP	NoToo	1
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He even defeated Gary Kasparov.	VP	NoToo	2
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He defeated even Gary Kasparov.	prenominal	NoToo	3
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He defeated even Gary Kasparov.	prenominal	NoToo	4

	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He defeated Gary Kasparov, even.	postnominal	NoToo	5
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He defeated Gary Kasparov, even.	postnominal	NoToo	6
4	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA even chose Qatar.	VP	NoToo	1
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA even chose Qatar.	VP	NoToo	2
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA chose even Qatar.	prenominal	NoToo	3
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA chose even Qatar.	prenominal	NoToo	4
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA chose Qatar, even.	postnominal	NoToo	5
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA chose Qatar, even.	postnominal	NoToo	6
5	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He even hired a university professor.	VP	NoToo	1
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He even hired a university professor.	VP	NoToo	2
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He hired even a university professor.	prenominal	NoToo	3

	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He hired even a university professor.	prenominal	NoToo	4
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He hired a university professor, even.	postnominal	NoToo	5
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He hired a university professor, even.	postnominal	NoToo	6
6	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I even got an A+.	VP	NoToo	1
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I even got an A+.	VP	NoToo	2
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I got even an A+.	prenominal	NoToo	3
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I got even an A+.	prenominal	NoToo	4
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I got an A+, even.	postnominal	NoToo	5
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I got an A+, even.	postnominal	NoToo	6
7	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I even had an ace.	VP	NoToo	1
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I even had an ace.	VP	NoToo	2
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I had even an ace.	prenominal	NoToo	3

	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I had even an ace.	prenominal	NoToo	4
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I had an ace, even.	postnominal	NoToo	5
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I had an ace, even.	postnominal	NoToo	6
8	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She even won a gold medal.	VP	NoToo	1
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She even won a gold medal.	VP	NoToo	2
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She won even a gold medal.	prenominal	NoToo	3
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She won even a gold medal.	prenominal	NoToo	4
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She won a gold medal, even.	postnominal	NoToo	5
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She won a gold medal, even.	postnominal	NoToo	6
9	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I even rolled a six.	VP	NoToo	1
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I even rolled a six.	VP	NoToo	2

	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I rolled even a six.	prenominal	NoToo	3
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I rolled even a six.	prenominal	NoToo	4
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I rolled a six, even.	postnominal	NoToo	5
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I rolled a six, even.	postnominal	NoToo	6

B3- English non-fragments *Too* (54 items)

theme	context	context story	additional remark	syntax	presence Too	condition
1	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She even saw Obama, too.	VP	Too	1
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She even saw Obama, too.	VP	Too	2
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She saw even Obama, too.	prenominal	Too	3
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She saw even Obama, too.	prenominal	Too	4
	additive	People lined up at the climate conference to see government officials. Everyone saw several well known politicians. Nancy felt especially happy because she saw some of the really high profile politicians.	She saw Obama too, even.	postnominal	Too	5
	nonadditive	People lined up at the climate conference to see government officials. The line was too long, so each person got to meet only one official. Nancy felt happy because she got to see someone high profile.	She saw Obama too, even.	postnominal	Too	6

	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She even hugged Isaac, too.	VP	Too	1
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She even hugged Isaac, too.	VP	Too	2
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She hugged even Isaac, too.	prenominal	Too	3
2	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She hugged even Isaac, too.	prenominal	Too	4
	additive	It's International Friendship day and in our school, each child is supposed to hug at least one other student. Alice has not been talking to Isaac for the past few months since he's her least favourite classmate. But today Alice hugged all of her classmates.	She hugged Isaac too, even.	postnominal	Too	5
	nonadditive	It's International Friendship day at school and each child is supposed to choose exactly one other child to hug. Alice has not been talking to Harry, Alfie, and Isaac for the past few months. She particularly does not like Isaac. But today, she decided that the only person she would hug is someone she didn't normally talk to.	She hugged Isaac too, even.	postnominal	Too	6
3	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He even defeated Gary Kasparov, too.	VP	Too	1
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He even defeated Gary Kasparov, too.	VP	Too	2

	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He defeated even Gary Kasparov, too.	prenominal	Too	3
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He defeated even Gary Kasparov, too.	prenominal	Too	4
	additive	Tom participated in a chess tournament in which he did really well. He defeated multiple internationally renowned players.	He defeated Gary Kasparov too, even.	postnominal	Too	5
	nonadditive	Tom made it to the semi-finals in a chess tournament where he had to beat only one person to reach the final match. He did very well because he defeated an internationally renowned chess champion.	He defeated Gary Kasparov too, even.	postnominal	Too	6
4	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA even chose Qatar, too.	VP	Too	1
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA even chose Qatar, too.	VP	Too	2
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA chose even Qatar, too.	prenominal	Too	3
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA chose even Qatar, too.	prenominal	Too	4
	additive	To host a soccer world cup, the candidate country needs to have a suitable climate. For the next three world cups, the candidate countries do not necessarily have a suitable climate. But FIFA eventually chose three countries.	FIFA chose Qatar too, even.	postnominal	Too	5
	nonadditive	To host a soccer world cup, the candidate country needs to have a suitable climate. For 2022, the three candidates had unpleasant conditions. But FIFA eventually chose one.	FIFA chose Qatar too, even.	postnominal	Too	6
5	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He even hired a university professor, too.	VP	Too	1

	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He even hired a university professor, too.	VP	Too	2
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He hired even a university professor, too.	prenominal	Too	3
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He hired even a university professor, too.	prenominal	Too	4
	additive	The director of our high school has been looking for a number of teachers for a long time. He eventually hired a number of people to teach various courses.	He hired a university professor too, even.	postnominal	Too	5
	nonadditive	The director of our high school has been looking for a teacher for the mathematics course for a long time. He eventually hired one.	He hired a university professor too, even.	postnominal	Too	6
6	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I even got an A+, too.	VP	Too	1
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I even got an A+, too.	VP	Too	2
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I got even an A+, too.	prenominal	Too	3
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I got even an A+, too.	prenominal	Too	4
	additive	I took many courses last semester. The final exams were extremely difficult. I was really worried I would fail the semester. But I actually got some good grades.	I got an A+ too, even.	postnominal	Too	5
	nonadditive	I took one course last semester. The final exam for that course was extremely difficult. I was really worried I would fail. But I actually got a good grade on the final.	I got an A+ too, even.	postnominal	Too	6
7	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I even had an ace, too.	VP	Too	1
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I even had an ace, too.	VP	Too	2

	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I had even an ace, too.	prenominal	Too	3
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I had even an ace, too.	prenominal	Too	4
	additive	We were playing a card game where each player has five cards. The player with the highest card wins. Aces beat kings, kings beat queens, etc. In the end, Sally asked whether I had a jack. I said I did. But in fact, I had some better cards in my hand.	I had an ace too, even.	postnominal	Too	5
	nonadditive	We were playing a card game where each player gets only one card. Aces beat kings, kings beat queens, etc. In the end Sally asked whether I had a jack. But the only card I had was higher.	I had an ace too, even.	postnominal	Too	6
8	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She even won a gold medal, too.	VP	Too	1
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She even won a gold medal, too.	VP	Too	2
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She won even a gold medal, too.	prenominal	Too	3
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She won even a gold medal, too.	prenominal	Too	4
	additive	Everyone on the German swimming team won at least one medal. Mostly, people won bronze and silver medals. Mary did particularly well this year and won multiple medals.	She won a gold medal too, even.	postnominal	Too	5
	nonadditive	Each member of the German swimming team won exactly one medal: bronze, silver, or gold. Mary, who was trying out for the team, did particularly well and also ended up winning a medal.	She won a gold medal too, even.	postnominal	Too	6
9	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I even rolled a six, too.	VP	Too	1

	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I even rolled a six, too.	VP	Too	2
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I rolled even a six, too.	prenominal	Too	3
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I rolled even a six, too.	prenominal	Too	4
	additive	I was playing a dice game with some friends where each of us had to throw three dice at the same time and the one with the biggest total would win. I rolled high numbers.	I rolled a six too, even.	postnominal	Too	5
	nonadditive	I was playing a dice game with some friends where each of us had to throw one die and the one with the higher number would win. I was first and I rolled a high number.	I rolled a six too, even.	postnominal	Too	6

B4- Persian fragments (72 items)

theme	context	context story	additional remark	syntax	presence Too	condition
	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	حتی اوباما رو هم.	prenominal	NoToo	1
	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	حتی اوباما رو هم.	prenominal	NoToo	2
1	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	حتی اوباما رو.	postnominal	NoToo	3
	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	حتی اوباما رو.	postnominal	NoToo	4
	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	اوباما رو هم حتی.	prenominal	Too	5

	additive/nonadditive		متن	عبارت	position	Too	#
	nonadditive		مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	اوباما رو هم حتی.	prenominal	Too	6
	additive		مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	اوباما رو حتی.	postnominal	Too	7
	nonadditive		مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	اوباما رو حتی.	postnominal	Too	8
2	additive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	حتی ندا رو هم.	prenominal	NoToo	1
	nonadditive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	حتی ندا رو هم.	prenominal	NoToo	2
	additive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	حتی ندا رو.	postnominal	NoToo	3
	nonadditive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	حتی ندا رو.	postnominal	NoToo	4
	additive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	ندا رو هم حتی.	prenominal	Too	5
	nonadditive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	ندا رو هم حتی.	prenominal	Too	6
	additive		امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	ندا رو حتی.	postnominal	Too	7

	nonadditive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	ندا رو حتی.	postnominal	Too	8
3	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	حتی کاسپاروف رو هم.	prenominal	NoToo	1
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او تو این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	حتی کاسپاروف رو هم.	prenominal	NoToo	2
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	حتی کاسپاروف رو.	postnominal	NoToo	3
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او تو این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	حتی کاسپاروف رو.	postnominal	NoToo	4
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	کاسپاروف رو هم حتی.	prenominal	Too	5
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او تو این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	کاسپاروف رو هم حتی.	prenominal	Too	6
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	کاسپاروف رو حتی.	postnominal	Too	7
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او تو این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	کاسپاروف رو حتی.	postnominal	Too	8
4	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	حتی قطر رو هم.	prenominal	NoToo	1
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	حتی قطر رو هم.	prenominal	NoToo	2
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	حتی قطر رو.	postnominal	NoToo	3

	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می‌بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	حتی قطر رو.	postnominal	NoToo	4
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می‌بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	قطر رو هم حتی.	prenominal	Too	5
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می‌بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	قطر رو هم حتی.	prenominal	Too	6
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می‌بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	قطر رو حتی.	postnominal	Too	7
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می‌بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	قطر رو حتی.	postnominal	Too	8
5	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	حتی یه دانشجو رو هم.	prenominal	NoToo	1
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می‌گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	حتی یه دانشجو رو هم.	prenominal	NoToo	2
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	حتی یه دانشجو رو.	postnominal	NoToo	3
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می‌گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	حتی یه دانشجو رو.	postnominal	NoToo	4
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	یه دانشجو رو هم حتی.	prenominal	Too	5
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می‌گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	یه دانشجو رو هم حتی.	prenominal	Too	6
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	یه دانشجو رو حتی.	postnominal	Too	7

	nonadditive	مدت طولانی بود که که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	یه دانشجو رو حتی.	postnominal	Too	8
6	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	حتی بیست هم.	prenominal	NoToo	1
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	حتی بیست هم.	prenominal	NoToo	2
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	حتی بیست.	postnominal	NoToo	3
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	حتی بیست.	postnominal	NoToo	4
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	بیست هم حتی.	prenominal	Too	5
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	بیست هم حتی.	prenominal	Too	6
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	بیست حتی.	postnominal	Too	7
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	بیست حتی.	postnominal	Too	8
7	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهترداشتم.	حتی تک هم.	prenominal	NoToo	1
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	حتی تک هم.	prenominal	NoToo	2
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهترداشتم.	حتی تک.	postnominal	NoToo	3
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	حتی تک.	postnominal	NoToo	4

	additive/nonadditive		phrase	prenominal/postnominal	Too/NoToo	
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهترداشتم.	تک هم حتی.	prenominal	Too	5
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از یه ورق بهتر تو دستم داشتم.	تک هم حتی.	prenominal	Too	6
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهترداشتم.	تک حتی.	postnominal	Too	7
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از یه ورق بهتر تو دستم داشتم.	تک حتی.	postnominal	Too	8
8	additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	حتی یه طلا هم.	prenominal	NoToo	1
	nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	حتی یه طلا هم.	prenominal	NoToo	2
	additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	حتی یه طلا.	postnominal	NoToo	3
	nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	حتی یه طلا.	postnominal	NoToo	4
	additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	یه طلا هم حتی.	prenominal	Too	5
	nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	یه طلا هم حتی.	prenominal	Too	6
	additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	یه طلا حتی.	postnominal	Too	7
	nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	یه طلا حتی.	postnominal	Too	8

theme	context	context story	additional remark	syntax	presence Too	condition
9	additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	حتی شش هم.	prenominal	NoToo	1
	nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	حتی شش هم.	prenominal	NoToo	2
	additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	حتی شش.	postnominal	NoToo	3
	nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	حتی شش.	postnominal	NoToo	4
	additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	شش هم حتی.	prenominal	Too	5
	nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	شش هم حتی.	prenominal	Too	6
	additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	شش حتی.	postnominal	Too	7
	nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	شش حتی.	postnominal	Too	8

B5- Persian non-fragments (72 items)

theme	context	context story	additional remark	syntax	presence Too	condition
1	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	حتی اوباما رو هم دید.	prenominal	NoToo	1
	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	حتی اوباما رو هم دید.	prenominal	NoToo	2
	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	حتی اوباما رو دید.	postnominal	NoToo	3

	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	حتی اوباما رو دید.	postnominal	NoToo	4
	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	اوباما رو هم حتی دید.	prenominal	Too	5
	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	اوباما رو هم حتی دید.	prenominal	Too	6
	additive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. هر کس چندین سیاستمدار معروف را دید. سارا خیلی خوشحال بود چون تعدادی از سیاستمداران بالا رتبه را دید.	اوباما رو حتی دید.	postnominal	Too	7
	nonadditive	مردم برای دیدن سیاستمداران پشت در سالن کنفرانس صف کشیده بودند. صف خیلی طولانی بود. به خاطر همین، هر نفر موفق شد که فقط یک سیاستمدار را ببیند. سارا خیلی خوشحال بود چون بالاخره یک شخص عالی رتبه رو دید.	اوباما رو حتی دید.	postnominal	Too	8
2	additive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	حتی ندا رو هم بغل کرد.	prenominal	NoToo	1
	nonadditive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	حتی ندا رو هم بغل کرد.	prenominal	NoToo	2
	additive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	حتی ندا رو بغل کرد.	postnominal	NoToo	3
	nonadditive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	حتی ندا رو بغل کرد.	postnominal	NoToo	4
	additive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	ندا رو هم حتی بغل کرد.	prenominal	Too	5
	nonadditive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	ندا رو هم حتی بغل کرد.	prenominal	Too	6

Num	Condition	Context	Sentence	Position	Too	#
	additive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید حداقل یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم خیلی از همکلاسی هایش را بغل کرد.	ندا رو حتی بغل کرد.	postnominal	Too	7
	nonadditive	امروز روز جهانی دوستی بود. تو کلاس ما، هر دانش آموز باید فقط یک نفر دیگر را به رسم دوستی بغل می کرد. مریم تو چند ماه گذشته با سارا و ستاره و ندا صحبت نمی کند، مخصوصا با ندا چون او را اصلا دوست نداره. اما امروز مریم بالاخره یک نفر رو بغل کرد.	ندا رو حتی بغل کرد.	postnominal	Too	8
3	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	حتی کاسپاروف رو هم شکست داد.	prenominal	NoToo	1
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	حتی کاسپاروف رو هم شکست داد.	prenominal	NoToo	2
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	حتی کاسپاروف رو شکست داد.	postnominal	NoToo	3
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	حتی کاسپاروف رو شکست داد.	postnominal	NoToo	4
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	کاسپاروف رو هم حتی شکست داد.	prenominal	Too	5
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	کاسپاروف رو هم حتی شکست داد.	prenominal	Too	6
	additive	آرش تو مسابقات شطرنج شرکت کرد و خیلی خوب عمل کرد. او چندین شطرنج باز معروف را شکست داد.	کاسپاروف رو حتی شکست داد.	postnominal	Too	7
	nonadditive	آرش تو مسابقه ی نیمه نهایی شطرنج، باید فقط یک نفر را شکست می داد تا به فینال برسد. او این مسابقه خیلی خوش درخشید، چون یک قهرمان را شکست داد.	کاسپاروف رو حتی شکست داد.	postnominal	Too	8
4	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	حتی قطر رو هم انتخاب کرد.	prenominal	NoToo	1
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	حتی قطر رو هم انتخاب کرد.	prenominal	NoToo	2
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	حتی قطر رو انتخاب کرد.	postnominal	NoToo	3
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	حتی قطر رو انتخاب کرد.	postnominal	NoToo	4
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوایی خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	قطر رو هم حتی انتخاب کرد.	prenominal	Too	5

	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	قطر رو هم حتی انتخاب کرد.	prenominal	Too	6
	additive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. هیچ یک از کشورهای کاندید برای سه جام جهانی آینده، شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و سه کشور رو انتخاب کرد.	قطر رو حتی انتخاب کرد.	postnominal	Too	7
	nonadditive	برای میزبانی جام جهانی فوتبال، کشور کاندید می بایست آب و هوای خوبی داشته باشد. برای جام جهانی ۲۰۲۲، هیچ یک از کشورهای کاندید شده شرایط آب و هوای خوبی نداشتند. اما فیفا امسال به مسئله آب و هوای میزبان اهمیت نداد و یک کشور رو انتخاب کرد.	قطر رو حتی انتخاب کرد.	postnominal	Too	8
5	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	حتی یه دانشجو رو هم استخدام کرد.	prenominal	NoToo	1
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	حتی یه دانشجو رو هم استخدام کرد.	prenominal	NoToo	2
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	حتی یه دانشجو رو استخدام کرد.	postnominal	NoToo	3
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	حتی یه دانشجو رو استخدام کرد.	postnominal	NoToo	4
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	یه دانشجو رو هم حتی استخدام کرد.	prenominal	Too	5
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	یه دانشجو رو هم حتی استخدام کرد.	prenominal	Too	6
	additive	مدت طولانی بود که مدیر دبیرستان ما به دنبال چند معلم برای دروس مختلف بود. او بالاخره چند نفررا استخدام کرد.	یه دانشجو رو حتی استخدام کرد.	postnominal	Too	7
	nonadditive	مدت طولانی بود که مدیر دبیرستان ما به دنبال یک معلم برای درس ریاضی می گشت. او بالاخره یک نفر را برای این درس استخدام کرد.	یه دانشجو رو حتی استخدام کرد.	postnominal	Too	8
6	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	حتی بیست هم گرفتم.	prenominal	NoToo	1
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	حتی بیست هم گرفتم.	prenominal	NoToo	2
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	حتی بیست گرفتم.	postnominal	NoToo	3
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	حتی بیست گرفتم.	postnominal	NoToo	4
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	بیست هم حتی گرفتم.	prenominal	Too	5

		داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت...				
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینال گرفتم.	بیست هم حتی گرفتم.	prenominal	Too	6
	additive	ترم قبل تعداد زیادی درس داشتم. امتحانات فاینال بسیار سخت بودند و من نگران بودم که مردود شوم. اما در نهایت چند تا نمره ی خوب گرفتم.	بیست حتی گرفتم.	postnominal	Too	7
	nonadditive	ترم قبل فقط یک درس داشتم. امتحان فاینال این درس بسیار سخت بود و من نگران بودم که مردود شوم. اما در نهایت یه نمره ی خوب توامتحان فاینالم گرفتم.	بیست حتی گرفتم.	postnominal	Too	8
7	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من تا چند تا ورق بهتردارم.	حتی تک هم داشتم.	prenominal	NoToo	1
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	حتی تک هم داشتم.	prenominal	NoToo	2
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهتردداشتم.	حتی تک داشتم.	postnominal	NoToo	3
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	حتی تک داشتم.	postnominal	NoToo	4
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهتردداشتم.	تک هم حتی داشتم.	prenominal	Too	5
	nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	تک هم حتی داشتم.	prenominal	Too	6
	additive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفر پنج ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من از چند تا ورق بهتردداشتم.	تک حتی داشتم.	postnominal	Too	7

nonadditive	داشتیم یک بازی با ورق می کردیم که تو آن هر نفرفقط یک ورق تو دستش داشت. کسی که بالاترین ورق را تو دستش داشت، برنده ی بازی بود. تک بالاتر از شاه است، شاه بالاتر از بی بی، بی بی بالاتر از سرباز و غیره. آخر بازی مینا از من پرسید که آیا تو دستم سرباز دارم. ولی من یه ورق بهتر تو دستم داشتم.	تک حتی داشتم.	postnominal	Too	8
additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	حتی یه طلا هم برد.	prenominal	NoToo	1
nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	حتی یه طلا هم برد.	prenominal	NoToo	2
additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	حتی یه طلا برد.	postnominal	NoToo	3
nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	حتی یه طلا برد.	postnominal	NoToo	4
additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	یه طلا هم حتی برد.	prenominal	Too	5
nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	یه طلا هم حتی برد.	prenominal	Too	6
additive	هر کدام از اعضای تیم شنامون امسال حداقل یه مدال بردند. بیشتر افراد نقره و برنز بردند. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و چندین مدال برد.	یه طلا حتی برد.	postnominal	Too	7
nonadditive	هر کدام از اعضای تیم شنامون امسال فقط یک مدال بردند: طلا، نقره، یا برنز. مهدی که برای عضویت دائم تو تیم به صورت امتحانی شرکت کرده بود، خیلی خوش درخشید و یه مدال برد.	یه طلا حتی برد.	postnominal	Too	8
additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	حتی شش هم آوردم.	prenominal	NoToo	1
nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	حتی شش هم آوردم.	prenominal	NoToo	2
additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	حتی شش آوردم.	postnominal	NoToo	3
nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	حتی شش آوردم.	postnominal	NoToo	4

additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	شش هم حتی آوردم.	prenominal	Too	5
nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	شش هم حتی آوردم.	prenominal	Too	6
additive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید سه تا تاس را همزمان می انداختیم و کسی که در مجموع بالاترین عدد را می آورد برنده ی بازی بود. من امروز خوش شانس بودم و چند تا عدد خوب آوردم.	شش حتی آوردم.	postnominal	Too	7
nonadditive	داشتم با دوستانم بازی تاس می کردم. هر کداممون باید یک تاس رو می انداختیم و کسی که بالاترین عدد را می آورد برنده ی بازی بود. من نفر اول بودم و خیلی شانسی یه عدد خوب آوردم.	شش حتی آوردم.	postnominal	Too	8

Appendix C

Background questionnaires

C1- Background-Language Info: Native speakers

If you agree to participate, please complete the following questions.*

[ ] I consent to participate

1) Surname, First name*

_____

2) Participant Number*

_____

3) Date*

_____

4)

I consent to allow my data to be used in follow-up studies undertaken by Prof. Lydia White, Prof. Michael Wagner, Ms. Mortazavinia, or researchers affiliated with them. These researchers will not have access to my name or other identifying personal information.*

( ) Yes

( ) No

5) I consent to allow my data to be shared with other researchers in the field of language acquisition. These researchers will not have access to my name or other identifying personal information.*

( ) Yes

( ) No

Questionnaire

e-mail*: _____

Gender*

( ) M
( ) F
Age*: _____
Place of birth (City, country)*: _____
Occupation*: _____

Highest Level of schooling completed or in progress:*

( ) High school
( ) College/Professional
( ) University

Languages

What is your first language/mother tongue?*: _____
What are the first languages of your parents?*: _____

Do you know any other languages besides English? *

( ) No
( ) If yes, please list the language(s) and your proficiency level (beginner, intermediate, advanced, near-native):: _____*

_____

Thank You!

If you agree to participate, please complete the following questions.*

[ ] I consent to participate

1) Surname, First name*

_____

2) Participant Number*

_____

3) Date*

_____

4)

I consent to allow my data to be used in follow-up studies undertaken by Prof. Lydia White, Prof. Michael Wagner, Ms. Mortazavinia, or researchers affiliated with them. These researchers will not have access to my name or other identifying personal information.*

( ) Yes

( ) No

5) I consent to allow my data to be shared with other researchers in the field of language acquisition. These researchers will not have access to my name or other identifying personal information.*

( ) Yes

( ) No

Questionnaire

e-mail*: _____

Gender

( ) M

( ) F

Age*: _____

Place of birth (City, country)*: _____

Occupation*: _____

Highest Level of schooling completed or in progress:

( ) High school

( ) College/Professional

( ) University

Languages

What is your first language/mother tongue?*: _____

What are the first languages of your parents?*: _____

At what age did you begin to learn Persian/English? *: _____

Where did you first learn Persian/English?

( ) Elementary school

( ) High school

( ) College

( ) University

( ) Other (please specify): _____*

For how many years have you studied Persian/English?*: _____

Have you ever spent time (one month or more) in any country where Persian/English is the native

language?

( ) No

( ) If yes, please indicate where (country and province/canton), what year, and how long you were there::
_____*

Are you currently taking a Persian/English course or courses?

( ) No

( ) If yes, please indicate what course(s) you are taking, where you are taking them, and what level(s) of proficiency you have reached:: _____*

Approximately how many hours a week do you use Persian/English? *:
_____

*Please rate your proficiency levels in Persian/English:**

	Beginner	**Intermediate**	**Advanced**	**Near-native**
Reading	( )	( )	( )	( )
Writing	( )	( )	( )	( )
Listening	( )	( )	( )	( )
Speaking	( )	( )	( )	( )

*Fluency in Persian/English:**

( ) Not fluent

( ) Fairly fluent

( ) Very fluent

*Pronunciation (accent) in Persian/English:**

( ) Obviously not Persian

( ) Good

( ) Native-like

*Do you know any other languages besides your mother tongue and Persian/English?**

( ) No

( ) If yes, please list the language(s) and your proficiency level (beginner, intermediate, advanced, near-native):: _____*

Thank You!

English proficiency test

This is a test to show how well you can recognize and use English grammatical structures. Each question in this test is part of a conversation. In each conversation a word (or group of words) is left out. Following the conversation are four choices of words which might be used in the incomplete conversation. You are to select the word (or group of words) which would be used by a speaker of English, and which will best fit into the conversation.

EXAMPLE:

"What is that thing?"
"That _____ a spider."

    a) to call
    b) for calling
    c) be called
    d) is called

The correct English sentence is: "That <u>is called</u> a spider."

Answer all of the questions in this test in this manner.
Mark only one answer for each problem.

Enter your name here:

☐   I consent to participate.

→ Click here to continue

1) "Will Tom be home this afternoon?"
"I am not certain. He _____ to the office."

   1. may to go
   2. might to go
   3. ought to go
   4. should to go

2) "Is Mr. Black in the office?"
"Yes. _____ he is in charge he must be here every day."

   1. Since
   2. However
   3. Whether
   4. Even

3) "Do the students like my course?"
"Yes, I heard them talk of it as _____ ."

   1. interesting
   2. interested
   3. interestingly
   4. interest

4) "Does Chester smoke?"
"Yes, but he doesn't buy cigarettes; he smokes other _____."

   1. people
   2. of people's
   3. from people
   4. people's

5) "Were you at the concert last night?"
"No, but _____, I would have enjoyed the music."

   1. I went
   2. did I
   3. had I gone
   4. I had gone

6) "Is Alan a careful driver?"
"Of course not. _____ he wouldn't have had that accident."

1. Nevertheless
2. However
3. Otherwise
4. Although

7) "Which does Mary like better, reading or writing?"
"She likes to read but she would rather _____."

1. to write
2. writing
3. have wrote
4. write

8) "Where is George going this afternoon?"
"He is being _____ to see the Statue of Liberty."

1. taken
2. to take
3. taking
4. take

9) "Tom's father wants to send him to medical school."
"Yes. He wants _____ him."

1. making a doctor
2. to make a doctor by
3. a doctor made from
4. to make a doctor of

10) "Do you think it will rain?"
"I don't know. It _____."

1. may
2. ought
3. seems
4. will

11) "She has very nice children."
"Yes, but her sons' friend _____ not very polite."

1. are
2. has
3. have
4. is

12) "Why are you going to the library?"
"It's _____ for me to study every night because we have a test every day."

1. necessarily
2. very necessary
3. too necessarily
4. too necessary

13) "Daddy, can I go out and play with Billy?"
"I don't care, Michael, so long _____ you don't play in the mud."

1. how
2. as
3. that
4. like

14) "Will she sing for us tonight?"
"No, before she comes, she will have been _____ too much already."

1. sang
2. singing
3. sing
4. sung

15) "Will you have cream in your coffee?"
"No thank you; I drink my _____."

1. coffee blackly
2. blackly coffee
3. coffee black
4. black coffee

16) "Did Helen go alone?"
"Yes, nobody went _____ she."

1. but
2. if
3. with
4. like

17) "Why can't I suck my thumb, Mommy?"
"Any boy who _____ would be laughed at."

1. would that do
2. would do that
3. that
4. would that

18) "There doesn't seem to be enough wood for the fire."
"No, we need _____ more."

1. many
2. any
3. some many
4. much

19) "Is Mrs. Doolittle happy now?"
"Jack's _____ the book pleased her very much."

1. to return
2. returned
3. return
4. returning

20) "Does Ed still see Eileen?"
"Yes, he _____ her since their first year in college."

1. has been seen
2. seen
3. has been seeing
4. is seeing

21) "I was writing a paper last night."
"How far did you get _____?"

   1. of it
   2. along it
   3. it with
   4. on it

22) "Joe loves to play football."
"He doesn't play it well, _____."

   1. however
   2. already
   3. still
   4. but

23) "Do you want another cup of coffee?"
"It depends on how much time _____ is before we have to leave."

   1. it
   2. there
   3. which
   4. what

24) "Might your daughter be permitted to bathe in such a public place?"
"I trust she would not wish to, but _____ she insist, I could not but allow it."

   1. do
   2. should
   3. can
   4. does

25) "Whom should we visit tonight?"
"Betty. _____ the girls in town, she is the friendliest."

   1. Of all
   2. From all
   3. All from
   4. All of

26) "Why didn't you send Max to the meeting?"
"_____ available, we would certainly have sent him."

1. He was
2. Wasn't he
3. Had he been
4. He had been

27) "What are those two people doing?"
"The day's work _____, Mary and Mabel are playing cards."

1. are done
2. doing
3. done
4. did

28) "Do you think it will rain?"
"_____ is of no concern to me."

1. It rains or not
2. Whether it rains or not
3. If or not it rains
4. Will it rain

29) "Why didn't your mother make a dress for you?"
"I didn't need it, but she _____ one if I had."

1. would have made
2. will have made
3. had made
4. would make

30) "Are the children ready for bed?"
"No. _____ get ready now."

1. Has them
2. Them have
3. They have
4. Have them

31) "Have you ever seen a house burn down so fast?"
"No, never _____ anything like it."

  1. I have seen
  2. have I seen
  3. seen I have
  4. have seen I

32) "Johnny doesn't sleep very long."
"No, he doesn't. I wish _____ several hours longer each day."

  1. he slept
  2. him sleeps
  3. him slept
  4. he sleeps

33) "Are you tired?"
"Yes, so much _____ that I could sleep for a week."

  1. as
  2. so
  3. like
  4. for

34) "Why are you going to your sister's?"
"She has the book about _____ the professor was talking."

  1. that
  2. what
  3. which
  4. it

35) "Do you want me to go?"
"Yes, I insist _____."

  1. on that go
  2. it that you go
  3. upon you go
  4. that you go

36) "Where are you going?"
"To the zoo. Jack insists upon _____ the new baby bear."

1. our to see
2. we seeing
3. our seeing
4. us to see

37) "Fred seems very clever."
"Yes, in fact his ideas led to _____ a pay raise."

1. his being awarded
2. him to be awarded
3. his awarded
4. him to award

38) "Do they go to a movie every week?"
"No, but they _____ last year."

1. used to did
2. was use to
3. used to do
4. used to

39) "Would you like something more to eat?"
"I'd like _____ fruit, please."

1. a few
2. a little
3. many
4. a little of

40) "What did Professor Downhill do next?"
"He had us all _____ our names on a piece of paper."

1. written
2. to write
3. write
4. wrote