Cross-linguistic Influence at Syntax-pragmatics Interface: A Case of OPC in Persian

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Abstract

Recent research in the area of Second Language Acquisition has proposed that bilinguals and L2 learners show syntactic indeterminacy when syntactic properties interface with other cognitive domains. Most of the research in this area has focused on the pragmatic use of syntactic properties while the investigation of compliance with a grammatical rule at syntax-related interfaces has not received due attention. In this study, the compliance of 67 Persian native speakers and 52 Persian speaking L2 learners of English with the Overt Pronoun Constraint (OPC, henceforth) a proposed UG principle, at the syntax-pragmatics interface is investigated. Both groups of participants demonstrated violations of the OPC at the syntax-pragmatics interface. It is argued that the results of this study both confirm and complement Sorace and Filiaci's (2006) Interface Hypothesis while showing that difficulties at interface contexts are more a result of interface complexities than cross-linguistic influence.

Keywords: Overt Pronoun Constraint, Syntax Pragmatics Interface, Second Language Acquisition, Cross Linguistic Influence

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1. Introduction

In recent Second Language Acquisition research, several studies (Montrul, 2004; Iverson & Rothman, 2008; Rothman, 2007; Serratrice, Sorace, & Paoli , 2004; Sorace, 2004, 2005; Tsimpli & Sorace, 2006) have suggested that interfaces of syntax and other cognitive domains pose difficulties for L2 learners and bilinguals in terms of interpreting and observing syntactic properties. In other words, bilinguals and L2 learners can easily acquire properties of narrow syntax while having difficulties acquiring interface properties which involve syntax and other cognitive domains. The difficulties in acquiring interface properties are instantiated in the form of syntactic indeterminacy or optionality (Sorace, 2000, 2003). Sorace and Filiaci (2006) referred to such syntactic indeterminacy in interface conditions as the Interface Hypothesis and even extended its application to other contexts such as L1 attrition and language breakdown.

The pro-drop parameter and its associated features have been one of the syntactic properties used in interface with another cognitive domain, mostly pragmatic knowledge, in order to examine syntactic indeterminacy on the part of bilinguals or L2 learners (Serratrice et al., 2004; Sorace & Filiaci, 2006; Tsimpli & Sorace, 2006;Tsimpli, Sorace, Heycock, & Filiaci, 2004). According to this parameter, null subject languages allow subjects in nonfinite clauses to be phonetically covert. The pro-drop parameter entails a cluster of properties (Chomsky, 1981; Cook & Newson, 2007; Ouhalla, 1999; Rothman & Iverson, 2007) some of which are pragmatically determined (Haegeman, 1991).

In examining cross-linguistic influence at syntax-related interfaces, especially the syntax-pragmatics interface, the influence of a non-null subject language, often English, on the use of overt pronouns in contexts where a null pronoun is required in a null subject language has been widely investigated

(e.g., Hacohen & Schaeffer, 2005, for English-Hebrew influence; Haznedar, 2010, for English-Turkish influence; Lapidus & Otheguy, 2005, and Paradis & Navarro, 2003, for English-Spanish influence).

Although most studies on cross-linguistic influence investigate bilingual acquisition contexts (Haznedar, 2010; Montrul, 2004; Paradis & Navarro, 2003), Sorace and Filiaci (2006), as mentioned above, have suggested that syntactic indeterminacy as a result of the syntax-pragmatics interface can also be applied to L1 attrition and second language acquisition contexts.

Moreover, studies on the interface between syntax and pragmatics often report pragmatically inappropriate use of grammatical properties on the part of bilinguals or L2 learners. Nevertheless, compliance with a grammatical rule on the part of both native speakers and L2 learners is often ignored. In other words, the issue of compliance with one feature of the grammar of a language, which is being influenced by the knowledge of another language, in a pragmatic context is not taken care of. Montalbetti's (1984) OPC is presumed to be a UG principle and, hence, a feature of the grammar of all null subject languages (Hawkins, 2008; Lozano, 2008; White, 2003). Thus, when the pro-drop parameter sets the value of [+pro-drop] for a language, the OPC becomes part of the grammar of that language.

In the present paper, the performance of Persian-speaking monolinguals and Persian-speaking advanced L2 learners of English on tasks involving OPC conditions is investigated. The task involves target sentences in Persian which are provided with contextualizing paragraphs as parts of a story. It will be shown whether participants demonstrate any kind of syntactic indeterminacy regarding this presumed UG principle when syntax interfaces with pragmatics.

2. Overt Pronoun Constraint

According to Montalbetti (1984), if the alternation between null and overt pronouns is allowed in a language, an overt pronoun in the embedded subject position cannot be bound by a quantified matrix subject. In order to shed more light on the OPC, examples from English and Persian are given below.

The bound interpretation of sentence 1 below (taken from Montalbetti, 1984) requires *he* to refer to *nobody*, i.e., the pronoun *he* is bound by the quantifier expression outside its binding domain:

1) Nobody believes that he is intelligent.

Under the bound reading, sentence 1 means that no member of a set believes that he-himself/she-herself is intelligent. The underlying interpretation is illustrated as "(No x: x a person) x believes that x is intelligent" (Montalbetti, 1984, p. 83).

However, the English sentence in 1 does not necessarily mandate a bound variable reading. The sentence also involves a free reading; i.e., the pronoun *he* can be free and coreferential with some entity other than the matrix subject. The free reading can be illustrated as: (No x: x a person) x believes that HE is intelligent. Thus, the English sentence in 1 is ambiguous.

Nevertheless, Montalbetti (1984) argues that this ambiguity is resolved in pro-drop languages because, in such structures, the lexically realized pronoun "cannot be construed as a bound pronoun, while the phonologically-null one (pro) can" (p.83).

Therefore, according to what Montalbetti (1984) calls OPC, sentences 2 and 3 below are ambiguous and unambiguous respectively:

2)	hichkas$_i$	fekr	nemikonad	ke	*pro*$_{i/j}$	bahoosh	ast
	no one	thought	does not	that	*pro*	intelligent	is
	No one thinks that he is intelligent.						

3)	hichkas$_i$	fekr	nemikonad	ke	oo$_j$	bahoosh	ast
	no one	thought	does not	that	s/he	intelligent	is

No one thinks that he is intelligent.

Montalbetti (1984) defines the OPC in the following way: "overt pronouns cannot link to formal variables iff the alternation overt/empty obtains" (p. 94). As stated in the definition, the OPC applies to languages in which overt pronouns can be substituted by null ones. Here, by formal variables, Montalbetti (1984) means: "v is a formal variable iff (i) v is an empty category in an argument position; and v is linked to a lexical operator in a non-argument position" (p. 48). Traces of WH-movement and of Quantifier Raising constitute examples of formal variables.

Therefore, overt pronouns cannot be bound by a quantifier NP unless they are linked to a *pro* which, in turn is bound by the quantifier NP. In sentence 4 below, the overt pronoun *oo* can be bound by the quantifier NP *hichkas* by being linked to the intermediate *pro*:

4)

hichkas$_i$	nagoft	ke	*pro*$_i$	fekr	mikonad	ke	oo$_i$	bahoosh	ast
no one	said not	that	*pro*	thought	does	that	s/he	intelligent	is

No one said that he thought that he was intelligent.

Despite some arguments against the universality of the OPC (Gurel, 2003; Sheen, 2000), this constraint has been used by several researchers (Kanno, 1997, 1998; Lozano, 2008; Peretz-Leroux & Glass, 1999) as one instance of a universal principle.

The stipulative nature of this constraint (R. Hawkins, personal communication, January 30, 2012) and its non-applicability to non-null subject languages provide an opportunity to investigate whether difficulties language learners/speakers face at the syntax-pragmatic interface are a result of interface complexities or cross-linguistic influence. To answer this question, linguistic

context has been incorporated in the materials of the present study and two groups of Persian native speakers, a group of monolinguals and a group of advanced L2 learners of English, have participated in this study.

3. This study

The present study aims to investigate whether Persian monolinguals and Persian speaking advanced learners of English act in accordance with the OPC in a context where syntax interfaces with pragmatics. The OPC has been presumed to be part of the grammar of all null subject languages and providing Persian sentences with pragmatic context gives us the opportunity to examine the influence of the syntax-pragmatics interface on compliance with a presumed UG principle. Pragmatic context is expected to influence the performance of both groups of participants in that they will show violations of the OPC. However, advanced L2 learners of English are expected to show higher rates of OPC violation because, besides linguistic context, their knowledge of English, a non-null subject language to which the OPC does not apply, is also assumed to influence their performance.

3.1. Participants

Sixty-eight Persian native speakers and 57 Persian-speaking advanced L2 learners of English participated in this study. Secondary-school students constituted the group of monolinguals. The criteria for selecting participants in this group were their mother tongue, which had to be Persian, and their English proficiency level, which had to be at the lowest level possible. The group of advanced English L2 learners, whose mother tongue had to be Persian, comprised of English Language and Literature majors at the University of

Tehran with a high level of English language proficiency, confirmed by their field of study and the quality of their education.

3.2. Materials

The language of the materials in this study was Persian. Three stories constituted the materials. Each story included 6 test sentences which were complex sentences with a finite embedded clause. Depending on the nature of the embedded subject pronoun, test sentences fell into two categories. In each test sentence, the matrix subject was a quantified expression, and the embedded subject pronoun was either null or overt. The classification of test sentences in each of the stories is illustrated in Table 1.

Table 1. Classification of Test Sentences in Each of the Stories

	Embedded subject pronoun	
Quantified matrix subject	Null	Overt
	3	3

There were a total of 18 test sentences (6 test sentences in 3 stories); so, the embedded subject pronoun in 9 of test sentences was null and in the other half was overt. Each test sentence was followed by a question which either explicitly or implicitly asked about the possible antecedent of the embedded subject pronoun. All the 9 test sentences whose embedded subject pronouns were null (3 null pronouns in each of the three stories) were followed by implicit questions which asked about the antecedent of the embedded subject pronoun with recourse to the embedded clause's verb. Out of the other 9 test sentences whose embedded subject pronouns were overt, 5 were followed by implicit questions and 4 were followed by explicit questions. Each question was followed by three options, with the third option being worded identically in all questions as "both *a* and *b*", and the other two options accommodating intra-

sentential and extra-sentential referents. Careful attention was paid to the random distribution of intra-sentential and extra-sentential referents between the first and second options so that participants could not recognize an identifiable pattern in the options. Paragraphs 5, 6, and 7 below, derived from the stories, illustrate the context, test sentences, and the type of questions and options. The context in the following paragraphs, which formed part of a series of paragraphs providing the whole context in each story, and the questions following test sentences have been translated from Persian into English.

5) Embedded null pronoun — Implicit question

Last week, when Mahsa was on her way home from school, she found a very expensive watch. Mahsa thought the only person who was so rich to have such a watch was Ms. Mohajerani. The next day, Mahsa showed the watch to her classmates and told them that she had found it.

hich	däneshämoozi	nagoft	ke	*pro*	säheb-e	sä'at	ast.
none	student	not said	that	*pro*	owner of	watch	is

None of the students said they were the owner of the watch.

Considering the sentence above, who do the students not consider as the owner of the watch?

a. Ms. Mohajerani
b. Students themselves
c. Both a and b

6) Embedded overt pronoun — Explicit question

Parisa talked to Mahsa's father about the issue and the first question Mahsa's father asked was:

che	kasi	edde'ä	mikonad	ke	oo	säheb-e	sä'at	ast?
what	person	claim	does	that	s/he	owner of	watch	is

"Who claims that she is the owner of the watch?"

In the sentence above, whom does "oo" refer to?

a. Any person who claims to own the watch
b. Ms. Mohajerani
c. Both a and b

7) Embedded overt pronoun — Implicit question

The day the students were preparing the classroom for the celebration, Mohsen lost his balance and fell on the teacher's desk. The desk broke. Suddenly, the principal of the school entered the classroom and angrily asked: "Who has broken the desk?"

har	däneshämoozi	edde'ä	mikard	ke	oo	meez-e	mo'allem	ra	shekaste ast.
every	student	claim	was doing	that	s/he	desk of	teacher	object marker	broken has.

Every student was claiming that he broke the teacher's desk.

In the sentence above, who each student was claiming broke the desk?

a. Mohsen
b. The student himself
c. Both a and b

3.3. Procedure

The materials were distributed among members of different intact classes. Using warm-up sentences and paragraphs, each class was instructed on how to perform the task. The participants were told that questions had no correct answers and their preferences were of our concern. There were no time limits imposed on the participants and they were asked not to go back and change their answers once they have answered a question. At the top of each test, there were questions about the participants' mother tongue. Out of the 125 participants who took part in the study, 6 were excluded from data analysis because they marked languages other than Persian as their mother tongue.

3.4. Results

3.4.1. Results from Persian Monolinguals

The means of the monolinguals' preference for any of the options were computed in percentage and are presented in Table 2. A one-way repeated measures ANOVA was conducted to compare the means of the monolinguals' preference for the intra-sentential referent, the extra-sentential referent, and the option including both when answering sentences with embedded overt subject pronouns. There was a significant difference between the three options, $F(2, 65)=52.99$, $p<.0005$; Wilks' Lambda=.38; multivariate partial eta squared =.62. However, pairwise comparisons, using Bonferroni adjusted confidence interval, showed that the difference was between the option "both" and the other two options and there was no significant difference between options containing intra-sentential and extra-sentential referents.

Table 2. Descriptive Statistics for Persian-speaking Monolinguals' Preferences for the Referent of Embedded Overt Subject Pronouns (in Percentage)

Type of referent	N	Mean	Standard deviation
Intra-sentential	67	40.29	32.58
Extra-sentential	67	48.75	32.47
Both	67	10.94	17.77

3.4.2. Results from Persian-speaking Advanced L2 Learners of English

The means of advanced English L2 learners' preference for any of the options were computed in percentage and are presented in Table 3. In order to investigate whether advanced English L2 learners' preference for the extra-sentential and intra-sentential referents in sentences containing embedded overt subject pronouns was significantly different, a one-way repeated measures ANOVA was conducted. Repeated measures ANOVA results

showed that there was a significant difference between the three options, F (2, 50)=33.69, p <.0005; Wilks' Lambda=.42; multivariate partial eta squared=.57. Nevertheless, pairwise comparisons, using Bonferroni adjusted confidence interval, showed that there was no significant difference between options containing the intra-sentential antecedent and the extra-sentential antecedent. The significant difference was between the option "both" and the other two options.

Table 3. Descriptive Statistics for Persian-Speaking Advanced English L2 Learners' Preferences for the Referent of Embedded Overt Subject Pronouns (in Percentage)

Type of referent	N	Mean	Standard deviation
Intra-sentential	52	50.0	33.98
Extra-sentential	52	37.82	34.31
Both	52	12.17	18.7

3.4.3. Results from comparing the performance of the two groups

In order to investigate the impact of knowledge of English on participants' preferred type of referent for embedded overt subject pronouns and see if there are any differences in the performance of Persian monolinguals and Persian-speaking advanced L2 learners in this regard, a mixed between-within subjects analysis of variance was performed. There was no significant interaction between group (monolinguals or English L2 learners) and the referent type (intra-sentential, extra-sentential, or both), F (2, 116)=1.57, p=.21; Wilks' Lambda=.97; partial eta squared=.02. There was a substantial main effect for the type of referent, F (2, 116)=83.25, p < .005; Wilks' Lambda=.41; partial eta squared=.58, with both monolinguals and advanced English L2 learners showing a reduction in their preference rate for the option "both". The main effect comparing the performance of the two groups of

participants was not significant, F (1, 117)= .00, p=1.0, partial eta squared=.00, suggesting no difference between the performance of the two groups of participants.

4. Discussion

The OPC, as a UG principle (Lozano, 2008; Perez-Leroux & Glass, 1999; White, 2003), rules that an overt pronoun in the embedded subject position cannot be bound by a quantified matrix subject. In other words, in all null-subject languages, the structure [Quantified Matrix Subject$_i$ ... Embedded Overt Subject Pronoun$_i$] is ungrammatical. As this constraint is claimed to be in the grammar of every null-subject language and does not apply to non-null-subject languages, it is a potentially research-worthy domain to investigate cross-linguistic influence at the syntax-pragmatics interface on the compliance with a grammatical principle. To this end, the influence of knowledge of L2 English, a non-null-subject language, on L1 Persian, a null-subject language, was investigated in this study. The stories in the materials also provided the pragmatic context that interfaced with the syntactic knowledge of participants.

Moreover, data from Persian monolinguals were investigated to see if non-compliance with a grammatical rule at syntax-pragmatics interface could be observed without any kind of cross-linguistic influence. Thus, comparing the results obtained from the two groups of participants, the extent to which knowledge of another language could influence syntactic indeterminacy at syntax-related interfaces could be examined.

The preference rate of both groups of participants for the intra-sentential antecedent in sentences containing quantified matrix subjects and embedded overt subject pronouns was not significantly different from their preference rate for the extra-sentential antecedent; i.e., the participants demonstrated a

considerable violation rate regarding the OPC. Therefore, the results showed that a universal grammatical rule was violated by both groups of participants.

Furthermore, the OPC violation rate, as shown by participants' selection rate for the intra-sentential antecedent (Persian native speakers=40.3%; L2 English learners=50%), was not significantly different between the two groups of participants. In other words, although advanced L2 English learners were expected to show a higher OPC violation rate when syntax interfaced with pragmatic knowledge, there was no significant difference between their performance and that of Persian monolinguals. This finding shows that the influence of the syntax-pragmatics interface on compliance with a grammatical rule overshadows a cross-linguistic influence.

Not only did the selection rate of the two groups of participants for the intra-sentential antecedent not differ from one another, but also their selection rate for the extra-sentential antecedent (Persian native speakers=48.7%; English L2 learners= 37.8%) and the "both" option (Persian native speakers = 10.9%; English L2 learners=12.1%) did not reveal any significant difference. Results from conducting the mixed between-within subjects ANOVA also provided evidence that the interaction between the type of referents the participants selected and the type of groups they belonged to was not significant (partial eta squared=.02). In other words, only 2 percent of the variance in participants' selection rate for the three options can be explained by the groups into which the participants fall or, interpreted alternatively, by their knowledge of English.

Previous studies (Lapidus & Otheguy, 2005; Montrul, 2004; Paradis & Navarro, 2003; Serratrice et al., 2004) have shown that at interfaces of syntax with other cognitive domains bilinguals and L2 learners demonstrate pragmatically inappropriate uses of the overt pronoun in a null-subject

language under cross-linguistic influence. The present study showed that two groups of Persian native speakers, one under no cross-linguistic influence and the other under cross-linguistic influence from English, demonstrated violations of a presumed UG principle, which is a violation much more serious than violations of pragmatic norms.

5. Conclusion

The findings of the present study both confirm the Interface Hypothesis (Sorace & Filiaci, 2006) and complement it by extending the application of syntax indeterminacy at syntax-related interfaces to contexts of L1 use in which there is no cross-linguistic influence. Moreover, as the present study showed that there was no significant difference between OPC violation rates of Persian monolinguals and Persian-speaking advanced L2 learners of English at the syntax-pragmatics interface, the findings support Rothman's (2007) conclusion that difficulties posed by syntax-related interfaces are a result of interface complexities rather than cross-linguistic influence. Along the same lines, the present study backs Sorace and Filiaci's (2006) explanation for their Interface Hypothesis which argues that the non-observance of syntactic properties when they interface with other cognitive domains is due to the lack of sufficient processing resources for language learners/speakers to enable them to handle the different kinds of information involved in interface contexts.

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