Morphological Analysis of English L1-Persian L2 Adult Learners' Interlanguage: From the Perspective of SLA Variation

Maassoumeh Bemani Naeini

Abstract—Studies on interlanguage have long been engaged in describing the phenomenon of variation in SLA. Pursuing the same goal and particularly addressing the role of linguistic features, this study describes the use of Persian morphology in the interlanguage of two adult English-speaking learners of Persian L2. Taking the general approach of a combination of contrastive analysis, error analysis and interlanguage analysis, this study focuses on the identification and prediction of some possible instances of transfer from English L1 to Persian L2 across six elicitation tasks aiming to investigate whether any of contextual features may variably influence the learners' order of morpheme accuracy in the areas of copula, possessives, articles, demonstratives, plural form, personal pronouns, and genitive cases. Results describe the existence of task variation in the interlanguage system of Persian L2 learners.

Keywords—English L1, Interlanguage Analysis, Persian L2, SLA variation.

I. INTRODUCTION

THE notion of Second Language Acquisition (SLA) has long been recognized by linguists interested in contrastive linguistics. It was through studies on Contrastive Analysis (CA) where errors were regarded as evidence of language transfer [1], [2] while the advocates of Error Analysis (EA) initiated a shift of attitudes towards errors in the late 1960s and early 1970s, paying more attention to the underlying process of SLA rather than just the product. For instance, Corder [3] stated that errors are evidence of the learners "built-in syllabus", which was later termed "interlanguage" by Selinker [4], who also argued that the best data for the study of interlanguage is the learner language produced in meaningful interaction, which is different from what the learner produces in a controlled learning context. Since then, EA has been practiced as an area of second language acquisition research [5]-[7], and seems to continue so as making errors is inevitable in the process of language acquisition [8].

Literature has since attempted to explore the mental and behavioral processes language learners go through in order to better inform pedagogy [9]. One obstacle to establishing a unique system underlying learner language is variable performance across context when assessing the same form in the IL. However, the exact causes of such variation remain to be explored [10]. As discussed by Tarone [11], a number of scholars have proposed different causes for IL variation such as, linguistic context [12], [13], the role of the interlocutor [14], the topic [15], social norms [16], form-functions [17], and psycholinguistic factors such as form-focused attention, whether following from the Monitor model [18] or from the variationist (Chameleon) model [19]. In sum, due to the complexity of SLA, different scholars have hypothesized that multiple factors, including features of linguistic and social-psychological contexts, may influence SLA variation.

With respect to the importance given to English as an international language throughout the world, considerable research has been done on Persian L1 speakers' acquisition of English L2; however, there has been very little SLA research on English L1 speakers' acquisition of Persian L2. This area entitles more investigation to account for the need of both Persian teachers and Persian language learners.

From another perspective, Persian acquisition is in need of some investigation in terms of task-based variation. In Tarone's [20] words, a combination of variable features should be examined to come up with a more reliable evaluation. In an attempt to fill the gap, the present study uses task-based methodology of eliciting the learner language to examine adult English speakers' acquisition of morphological features in Persian L2 as orally produced in an unrehearsed setting.
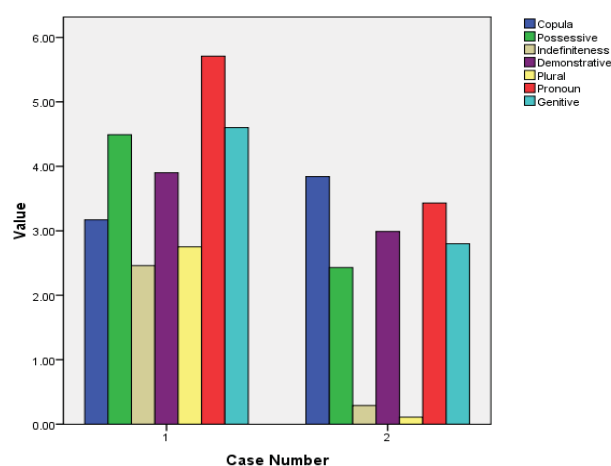

Fig. 1 Contrasting TLU values obtained by P (1) and F (2) in terms of morphemes

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II. Literature Review

Literature informs us that considerable amount of SLA research involves English as a second language, or of other European second languages [21], [22]. For instance, focusing on English as a foreign language, many researchers have carried out studies in an attempt to explore the difficulties encountered by speakers of Persian as a first language (L1) who are learning English as a second language (L2). In doing so, CA has been used to predict learners' transfer of linguistic patterns from L1 to L2. Although CA studies in theory could predict native language transfer in both directions (i.e. in Persian L1-English L2, as well as English L1-Persian L2), in fact all of these aimed to predict difficulties and challenges of Persian speakers trying to acquire English L2, and not the other way around.

According to Khanzadi [23], among very few SLA studies on English L1 learners of Persian L2 is the one carried out by Tarallo and Myhill [24]. Their focus was on English L1 speakers' acquisition of relative clauses in several L2s including Persian. They found that Persian learners' interlanguage was evidence of underestimating the role of L1 transfer as the predictions of CA did not come true.

Another research study was carried out by Ghadessy [25] examining some of the problems American students encounter in mastering the Persian sound system. In this study, the main source of difficulty was attributed to first language interference; i.e. English, among others, including transfer of training, induced errors, as well as learning strategies.

The third research study, which is of more relevance to the present study is Keshavarz [26], a longitudinal study of a bilingual child's simultaneous acquisition of morpheme sequence in English and Persian. Having established, through CA, that Persian is richer in morphology than English, Keshavarz [26] found that language specificity plays an important role in the development of L2 in that certain morphemes are acquired earlier. Such investigation has relevance for adult learners of Persian L2 in that one may investigate whether adults acquire a second language in the same way as the first. If the Persian L2 acquisition sequences are similar to those of Persian L1 acquired by children, both groups are probably using the same learning process [27]. So, based on these findings for early acquisition of Persian by a bilingual child, one might predict, in accordance with the predictions made by CA, that adult American learners will also acquire certain Persian morphemes earlier, having less difficulty. If not, what factors are involved which give rise to such variation?

Yet, another contributing study is Khanzadi [28]. In her study, she investigated Persian L2 as the interlanguage produced across tasks by English L1 speakers. Her focus was on the use of two Persian velar fricative phonemes (/q/ and /x/). The study provides a support not only for CA, but for variationist theory, as well. The findings suggest the significance of L1 transfer in terms of linguistic variables such as the position of phonemes, as well as that of context. The present study uses the same data.

III. Present Study

The present study is a descriptive analysis of morphological features of Persian learner language, including copula, indefinite article, possessives, demonstratives, plural form, personal pronouns, and genitive cases produced in unrehearsed task-based oral interaction by two adult English-speaking learners of Persian L2. The current study examines whether or not variation exists in the accuracy order of Persian acquisition, as elicited across different tasks.

Using CA, this study intends to identify and predict any possible incidents of transfer from English L1 to Persian L2. Also, based on EA, the other sources involved in the production of inaccurate Persian morphology are tackled. Further, examining the overall linguistic patterns in learner language, the study seeks for any indication of task-related variation. In particular, the current study examines whether or not variation exists in the accuracy order of Persian morphology, as elicited across different tasks. In doing so, as pointed out by Tarone [10], the assumption is that variation is evident when learners produce IL in different tasks which are designed to require varying degrees of attention to accuracy; thus, producing a variety of styles which together make up the IL system. It is in accordance to this assumption that the present study tends to analyze the data gathered in six different tasks in a research study headed by Professor Elaine Tarone which is now freely available on [29]. Each task was purposefully designed to naturally elicit certain aspects of the language, such as questions, reference to past time, personal pronouns and possessives.

So, in accordance with the assumptions made by CA on one hand and SLA variation hypothesis on the other, the present study seeks to address the following research questions:

1. In unrehearsed oral communication, to what extent is English L1- Persian L2 learners' production of L2 morphemes congruent with predictions made by CA?
2. Is there any variation related to task evident in the learners' system of interlanguage morphology? If so, what may account for this variation?

IV. Methods

A. Procedure

First, a CA of Persian and English morphology will reveal the possible existence of the target Persian morphemes in the English morphologic inventory. Otherwise, could the predictions made by the strong version of CA hypothesis hold true about the production of Persian morphological features as a result of English transfer? If not, what else accounts for the complexity of the issue? So, the first step would be a CA of the morphologic inventories of the two languages.

1. Contrastive Analysis of Persian and English Morphology

In an attempt to consider the differences and similarities between Persian and English, Fallahi [30] contrasts and analyses grammatical structures of these languages in terms of four different categories:

a. A given structure may occur in Persian, but not in English.

CA of such a case may provide some implications for learning Persian in that native speakers of English learning Persian will find it difficult since they have to learn a totally new feature, but their L1 (English) will not interfere; therefore, it will neither hinder nor facilitate the acquisition of the relevant structure by the learner. The identification of such cases, however, is highly demanded for the purpose of learning.

b. A structure may occur in English but not in Persian. This is the case where English L1-Persian L2 learners face a problem because in many cases L1 interference acts as the main cause of error.

c. The identical structures may occur in both English and Persian. Fallahi [30] states that this relationship does not cause interference problems because the two languages have similar structures; thus, facilitating L2 learning.

d. The structure in English and Persian partially overlap. Fallahi [30] stresses that such cases of partial overlap are the primary concerns of CA, because the existing overlap leads learners to make identifications between the two systems which can either facilitate or inhibit learning. He states when the overlap is merely partial, the learner will tend to assume that it is total and will distort the target language structure in an attempt to secure its conformity with the source language. He goes on to state that in this kind of relationship two possibilities will be evident. First, the target language may have a wider range than its corresponding L1 structure (a "divergent" relationship); thus, falling high in the hierarchy of difficulty. Second, L1 may have a wider range than its corresponding L2. He terms this a "convergent" relationship which somehow facilitates learning.

In order to have more vivid understanding about the relationship between Persian and English morphology, a brief account of specified categories follows.

➢ Copula: As reported in literature, some grammarians regard "copula", mainly verb "to be" (Persian /budæn/), as identical to "linking verbs" when it is defined as a verb, which links the subject with a modifier [31]. However, there is not always a general agreement on this. Some classify "to be" as a separate category by itself. As noted by Hayati and Kalanzadeh [32], the reason is that "to be" can be followed not only by modifiers (like other linking verbs), but also by other types of complements. In addition, it is widely used in both English and Persian, functioning as an auxiliary. So, this study follows Crystal's [33] definition of copula as a verb with the primary function of linking the subject and complement, indicating that they are semantically equivalent and focuses on different forms of "to be". This element co-occurs in both English and Persian; i.e. semantically it refers to the existence of entities and grammatically, its different forms are used as auxiliary to make verbal aspects. So, it should not cause much difficulty for English speaking learners of Persian, except that Persian allows for using morphemes /-æm, -i, -e, -im, -id (-in), -ænd (-æn)/ as the reduced forms of /hæst-æm, hæst-i, hæst (æst), hæst-im, hæst-id, hæst-ænd/ (am,

are, is, are, are, are). Thus, it is assumed that English learners of Persian are posed by the complexity of conjugating Persian /budæn/ (to be) where they have to learn more morphemes.

➢ Possessives: Persian possession is normally expressed by bound personal pronouns coming at the end of a noun phrase (noun + adjective) e.g. پدرم /pedær-æm/ (my father). Also, possessives may be expressed by using genitive case and free personal pronouns. This structure is mainly used for emphasis, e.g. /pedær-e mæn/. It should be noted that since Persian is a gender-free language, there is only one single form for third person singular. Also, Persian grammar allows for replacing second and third person singular with second and third plural forms for expressing politeness. Table I presents these morphemes:

TABLE I
PERSIAN POSSESSIVE MORPHEMES

	Person	Singular	Plural
Bound	1st	-æm /ketab-æm/ (my book)	-eman /ketab-e man/ (our book)
	2nd	-æt /ketab-æt/ (your book)	-etan /ketab-e tan/ (your book)
	3rd	-æsh /ketab-æsh/ (his/her book)	-eshan /ketab-e shan/ (their book)
Free	1st	/ketab-e mæn/ (my book)	/ketab-e ma/ (our book)
	2nd	/ketab-e to/ (your book)	/ketab-e shoma/ (your book)
	3rd	/ketab-e u/ (his/her book)	/ketab-e anha/eeshan/ (their book)

So, the property of lack of gender is assumed to facilitate the task for English L1 learners of Persian L2. However, we need to bear in mind that the reverse order of "noun + adjective" could cause some problems for such learners.

➢ Articles: While the definite article in English, for both singular and plural nouns, is "the", definiteness is not marked in restrict sense in Persian although sometimes demonstrative adjectives can be used to indicate definiteness. The lack of a definite article indicates that a noun is definite in itself. So, /ketab/ means "book" or "the book", according to the context, whether to talk about something known or obvious to the listener [34]:

/Mashin dær parking æst./ (The car is in the parking.);

or to talk about all the things referred to by a noun:

/æz mar mi-tærs-æd./ (s/he is afraid of snakes.);

or to talk about something unique:

/Aseman aftabi bud. /(The sky was sunny.)

There is still another way to indicate definiteness and that is when a definite noun functions as the direct object of the sentence, the particle /ra/ follows the noun:

/ketab ra khandæm./ (I read the book.)

In colloquial language, the definiteness is sometimes expressed by adding the suffix /-e/ to the noun:

/madær-e amæd./ (The mother came)

In Persian indefiniteness is marked by means of adding the suffix /-i/ to the noun, either singular or plural, or by the use of the numeral /yek/ or /ye (colloquial)/ meaning "one". In addition, there are cases in Persian where the suffix /-i/ is added

to the modifier of a noun rather than to the noun:

/kif-i khærid-æm/   *(I bought a book.)*
/ketab-ha-i khæarid-æm/ *(I bought some books)*
/yek ketab khærid-æm/   *(I bought a book.)*
/bæche-ye khub-i æst/   *(s/he is a good child)*

So, due to the fact that Modern Standard Written Persian does not have a formal single word corresponding to the English definite article "the", it is speculated that the acquisition of Persian definiteness will not cause much difficulty. In terms of indefiniteness, Persian morphemes are somehow compatible with their corresponding morphemes in English. However, it can be perceived that Persian L2 learners are more likely to face a problem in producing indefiniteness when they find it irregular to add indefinite marker /-i/ to and adjective, too.

➢ Demonstratives: Persian demonstratives function as adjectives and pronouns. Demonstrative adjectives modify the noun they precede and do not agree with that noun, neither in number nor in gender, while as pronouns, they stand on their own replacing a noun and agreeing in number with that noun. Demonstratives, including proximal and distal, are divided into simple form and compound when they are combined with certain words. In addition, Persian demonstrative /an-ha/ (they) and /an/ (he, she, it) may be used for third person personal pronouns, as well. Table II illustrates Persian demonstratives.

TABLE II
PERSIAN DEMONSTRATIVES

Demonstrative	Adjective / Pronoun	
	Simple	Compound
Proximal	/in/ (this, these)	/hæmin/ (this, these) = this same
Distal	/an/ (that, those)	/hæman/ (that/those) = that same

The category of Persian demonstratives appears to be less difficult for English L1/Persian L2 learners as both L1 and L2 use them in the same way. So, based on CA assumption, the subjects of this study should produce them with higher rate of accuracy.

Plural markers. In Modern Persian, plural nouns are generally formed in two ways:

• using the plural suffix */-ha/; e.g. /ketab-ha/ (books) or /mærd-ha/*

• using the plural suffix */-an/; e.g. /mærd-an/ (men) or /hæmsaye-gan/*

Words are normally pluralized with the suffix /-ha/ while the plural suffix /-an/ (/-gan/ after /e/ and /-yan/ after other vowels) is mainly used to designate human beings.

It should be pointed out that nouns in Persian are not pluralized when used with numbers because a number itself indicates the quantity e.g. /yek ketab/ (one (a) book), /do ketab/ (two books, literally: two book). Therefore, one might assume that although the general rule of adding plural morpheme exists in both English and Persian, Persian L2 learners may supposedly find it very difficult to avoid numeral-noun agreement.

➢ Personal pronouns. There are two types of personal pronouns in Persian. First, there are free personal pronouns

(mæn, to, u, ma, shoma, ishan/an-ha) which are not dependent on the preceding word and can be used on their own. They are comparable to English personal pronouns (I, you, s/he, we, you, they) and refer only to humans, except the generalized demonstrative plural /an-ha/. On the other hand, there exist bound personal pronouns in Persian (-æm, -æt, -æsh, -man, -tan, -shan) which are dependent on their preceding word and make syllable with it. They function in different roles, such as verb endings and possessives which were described above, as well as other functions that follow [35]:

a. As non-topical direct objects:
/mæn u ra did-æm/   *(I saw him)*
/did-æm-æsh/   *(I saw him)*

b. As objects of prepositions:
/æz u porsid-æm/ *(I asked him)*
/æz-æsh porsid-æm/   *(I asked him)*

c. As experiencers in indirect constructions (in colloquial language)
/kheyli khub chiz-i gir-æsh amæd/ *(a very good thing came within his grasp)*

Altogether, it does not seem that Persian free personal pronouns pose much difficulty on the part of English L1 learners of Persian L2 in that they co-occur in both languages. The only problem they might face is different ordering when used as possessives. But when it comes to use bound forms, the task becomes subtler for English speakers as they need to learn and practice a totally new phenomenon. This is the case where Persian morphology differs from English, but then the same morphemes fulfill different functions which could somehow facilitate the task for such learners.

➢ Genitive case. This element which is introduced with enclitic /-e/ or /-ye/ (after vowels), sometimes referred to as "/ezafeh/", marks a word as modifying another word to indicate, for example, possession as in / ketab-e Sara/ (Sara's book) or as other relationships (NP1-e NP2) like /shæhr-e Tehran/ (Tehran city; literally: the city of Tehran). Also, since the relationship between an adjective and a noun is that of modification, the Persian genitive case is also used to show such a relationship (NP -e ADJ), for example /ketab-e khub/ (good book) [36].

So, according to CA, it seems that learning this totally different element might not necessarily bring about many problems for Persian L2 learners and L1 transfer cannot be at work. Learners may find learning Persian genitive difficult, as Persian places heads before attributes, which is a reverse order when compared to the English arrangement.

In summary, on the basis of CA, one can predict that English speaking learners of Persian produce inaccurate utterances mainly due to the divergent relationship between corresponding elements. Altogether, there are elements of complexity and irregularity existing in Persian morphology which can be problematic; for instance, the existence of both free and bound morphemes for possessives or the lack of numeral-noun agreement in the category of plural markers. So, the presence of the following types of errors in the interlanguage of the subjects of the present study may be a result of mother tongue

interference: The use of possessives and genitives, due to the reverse ordering of the relationship of head noun and modifier; plural forms and the use of bound morphemes.

B. Participants

Two female English L1 speakers participated in this study. One of them, "Pari" (a pseudonym; hereafter P), was more proficient having experienced exposure to Persian for two years in both accuracy-oriented and communication-oriented settings. The other participant, "Fereshteh" (a pseudonym; hereafter F), had studied Persian for one year in a formal classroom setting where the focus was on accuracy and grammar. Detailed background information about the participants is accessible at [37].

C. Tasks

Six communication tasks, each designed to particularly elicit different aspects of learner language, were employed in this study. These tasks were all designed based on the idea that the data should be collected spontaneously in an unrehearsed situation. A full description of all tasks along with the prompts and instructions has been provided at [38]. A summary description of the tasks follows:

In Task 1, Interview, the participants are to take part in an interview conducted by a native speaker of Persian. The task has been designed to elicit personal information, past time, reference, negotiating for meaning, correcting feedback, providing input. Task 2, Question, involves asking questions from a native speaker about what they see in the picture prompts. The purpose is to investigate linguistic aspects such as, asking questions, reference, negotiating for meaning, and scaffolding. In Task 3, Retell, the participants are examined on narrating the story about the same picture prompts they already asked questions about in Task 2. This task serves particularly to the purpose of investigating reference, cohesiveness. The fourth Task, Narrative, requires the participant to take part in activities such as, looking at the pictures showing a series of events and narrating what happened (Reference: "distinguishing female protagonists and location of bottle", [10, p. 173], [9, p. 163]. This task would elicit referential communication, personal pronouns by referring to entities, location and movement to make it clear for the interlocutor. In Task 5, Jigsaw, the participants would be engaged in activities that include giving information and asking questions about the different pictures of houses they have in order to find three differences and three similarities. They are not supposed to show their pictures to each other. The purpose is to elicit each participants' ability at using concrete nouns, comparison, same/different analysis, and picture description. It would also provide for their focus on meaning, co-construction and scaffolding in interaction. The last Task, Comparison, requires the participants to look at the same pictures in Task 5 and talk about the people who live in those houses and what the appearance of the houses tell them about American culture. The task would elicit data on the use of academic language, language complexity, abstract nouns (social class, culture), critical thinking, complex sentences, linking devices, building hypothesis and supporting evidence

(e.g. inferring the social class of people living in a house based on what they see in the picture: car, garage, nice house, dirty house, etc.).

D. Data Collection

The data for this analysis were gathered as part of a larger project funded by U.S. Department of Education Office Postsecondary Education Award # P017A090297,9/1/2009-8/31/2012, Principal Investigator Elaine Tarone, University of Minnesota. Four less-commonly-taught languages in the US were to be studied: Chinese, Japanese, Korean, and Persian. The focus of the present study will be only on the Persian learner language samples elicited in an unrehearsed setting.

E. Data Analysis

This study used the initial transcription (both in English and Persian orthography) executed by a native speaker Persian; however, the author who initially contributed to the procedure as a consultant, also made some minor changes to the transcriptions, such as using /æ/ sound to distinguish it from /a/. The data show the use of Persian produced orally in a non-rehearsed setting by F and P while completing Task 1 through Task 6. Then, the author of the present study identified and calculated the presence and absence of designated Persian morphological categories in the learners' productions. The focus was on copula (the verb: to be), possessives, indefinite articles, demonstratives, plural markers, personal pronouns, and genitive case markers.

For this study, the accurate usages of morphemes were measured in obligatory context. In Ellis's [39] words, "obligatory context requires the obligatory use of a specific grammatical feature in samples of learner language" (p. 716). So, the term "accuracy order" is used to approximate "acquisition order". In an attempt to identify possible interlanguage patterns, the learners' whole production of L2, not only errors, but also accurate items, were analyzed using Target Language Use (TLU) analysis proposed by Pica [40]. Pica's equation for TLU is the number of correct uses in obligatory context divided by (the number of obligatory contexts) + (the number of incorrect contexts) [9. p. 31]. This equation is a quantitative measure that enables us to compare the learners in terms of how target-like their use of L2 morphemes was. Therefore, all the instances in which P and F produced correct and incorrect versions of the seven target morphemes in obligatory context, specified by this study, were identified. The TLU rate of each morpheme produced throughout all six tasks was calculated.

V. RESULTS

Regarding the first research question, the rate of TLU calculated for target morphemes used by the subjects in each of the tasks gives us some insight as to the participants' level of accuracy. As predicted by the strong version of CA of Persian and English morphology, we expect that certain categories such as, possessive, plural forms and genitives would trigger a high level of difficulty for both learners due to the interference of L1. Some Persian morphemes, on the other hand, would not cause

much difficulty for more universal reasons, because they are unmarked and simple; e.g. copula, demonstratives, indefiniteness, and personal pronouns. Table III presents a summary of the analysis.

The data presented in Table III can be interpreted in terms of TLU calculated for each participant in regard to both the type of morpheme and the kind of task. As a whole, P gained a total of 27.08 (out of 42) for total use of Persian morphemes throughout all six tasks while F performed less accurately with a total of 15.89.

TABLE III
PERSIAN L2 LEARNERS USE OF MORPHEMES IN TASKS 1-6

Morpheme	Target Language Use (TLU)						Learner	Total
	Task							
	1	2	3	4	5	6		
Copula	0.73	0.37	0.42	-----	0.82	0.83	P	3.17
	0.50	0.57	0.70	0.60	0.60	0.87	F	3.84
Possess	0.70	1	0.79	-----	1	1	P	4.49
	-----	0.00	1	0.50	0.79	0.14	F	2.43
Article	0.43	1	0.14	0.55	0.05	0.29	P	2.46
	0.11	0.00	0.00	-----	0.07	0.11	F	0.29
Demon	1	1	1	0.00	-----	0.90	P	3.90
	1	0.60	0.33	0.33	-----	0.73	F	2.99
Plural	0.43	1	0.20	-----	0.50	0.62	P	2.75
	0.00	------	0.00	-----	-----	0.11	F	0.11
Pron	1	1	0.71	1	1	1	P	5.71
	1	------	1	0.43	1	-----	F	3.43
Genitive	0.75	0.40	0.85	1	0.71	0.89	P	4.60
	1	0.60	0.33	0.50	0.04	0.33	F	2.80
Total	5.04	5.77	4.11	2.55	4.08	5.53	**P: 27.08**	
	3.61	1.77	3.36	2.36	2.50	2.29	**F: 15.89**	

These results as well as the scores for each morpheme bear out that P is more proficient overall than F. As far as the use of target morphemes is concerned, we can say that P showed the highest level of accuracy for the use of personal pronouns (TLU = 5.71 out of 6) during her performance for all the tasks, while it seems that F had the least difficulty in the category of copula (TLU = 3.84 out of 6). It can be concluded that copula may have been the first-acquired of these morphemes for F, although this was not the case for P. The most difficult category with the lowest level of accuracy appears to be indefinite article for P (TLU = 2.46) and plural form for F (TLU = 0.11).

From the findings, there was no individual similarity of the accuracy order in the participants' performance. The accuracy order of P for Persian morphemes can be developed as: Personal pronoun, genitive, possessive, demonstratives, copula, plural form and indefiniteness. F's sequence of accurate Persian morphemes was found to be as: Copula, personal pronouns, demonstratives, genitive, possessive, indefiniteness, plural form (Fig. 1). Altogether, the results do not suggest consistency in relation to the use of morphologic category as the hierarchies developed by the participants variably contradict CA predictions.

A. Error Analysis of Persian Target Morphemes

From the perspective of EA, the findings account for a variety of sources of errors. For example, although mastering the uses of Persian morphemes is related to the similarities of general rules in both languages, sometimes other factors play an interfering role, ultimately leading to variation evident in error commitment. One area of error commitment was found to be omission of copula /æst/. Both subjects in the present study demonstrated difficulty in the use of this Persian morpheme. Although copula was found to be F's most accurate morpheme, she, too, avoided using this morpheme; thus, providing support for the strategy of avoidance.

For example, P did not use this morpheme in Task 4 and gained a TLU of 0.37 (i.e. five incorrect tokens out of 12); in Task 2 where she drops copula after adjectives: /mobaræk/ for /mobaræk æst (-e)/, F, too, did poorly in Task 1 (TLU = 0.50); e.g. she said: /mæn yek sal …zæban-e farsi…dærs mikhunæm/ where she omits /æst/ (and relative pronoun /ke/) intending to mean: "I have been studying Farsi for one year." or "It's been one year since I studied Farsi".

The use of plural markers was found to be very problematic for the subjects of this study as both of them performed rather poorly in this area (P: 2.75; F: 0.11). For example, P gained 0.43 in Task 1, while F's use of plurals was 100% inaccurate. Some examples of their production are expressive of the strategy of simplification involved:

P: /bæd æz in ke kæm kæm, *fe?, um, yad gereft-im . . . fe?l, æmma shekl, *shekl-e dige, *shekl-e mokhtælef/ (after we gradually learned verbs . . . verbs, but other forms, different forms)

F: / ba dust-e mæn væ aa kelas-e farsi dær, aa, daneshgah dærs mikhun-æm/ (with my friends and Farsi class I study at the university)

However, P does not seem to have a problem with the Persian rule of number + singular noun or with modifiers (e.g. /chænd/ + singular, although this is a case of "divergent relationship" which is supposedly a source of error according to CA:

P: /do sal o nim/ (two and half years) or /chænd kar-e mokhtælef/ (a few different jobs); nevertheless, she inaccurately used /hær/ (every/any single one) for /hæmeh/ (all), indicating L1 lexico-semantic interference of "every":

/hær zæman (for /hæme-ye zæman-ha [ra]) yad gereft-im/ (we learned all tenses).

At times, complexity of Persian plural rules does not seem to trigger any problem for P. For example, in Task 2, she produced two forms of plural (TLU = 1) and in both cases she accurately used not only the suffix /-an/ for humans: /be aparteman-e dustan-æsh mir-e?/ (Does she go to her friends' apartment?), but also the Persian rule of singular demonstrative /in/ (this) + plural noun:

/khob, in dokhtær-an ki-e?/ (Well, who are these girls?).

F did not use any plural form in this task.

Among the target morphemes, genitives are predicted by CA to be problematic as there is no such structure in English; however, the findings do not support this prediction, at least for P who gained a TLU of 4.60. F (TLU = 2.80), on the other hand, did not perform as accurately as P, but still this area was

not among the most troublesome for her. At times, the learners were even capable of producing /-ye/, a more marked feature, after vowels correctly. For example:

[Task 6, P] /fekr mikon-æm tu-ye in khune um … yek kargær zendegi mikon-e/ (I think there lives a worker in this house). Nevertheless, the fact that the Persian genitive case represents a variety of functions, such as possession, or the relationship of NP1 –e NP2, or NP –e ADJ may probably make the task more difficult for the learners. Some of their erroneous utterances follow:

[Task 2, P; omission of enclitic showing possession] /chera, chera *madær in dokhtær æsæbani shod?/ (Why did this daughter's mother got angry?) or due to the omission of enclitic showing relationship of preposition and NP: /*birun pænjære mir-e?/ (Does it go out (through) the window?). F, too, makes a similar error: /bæd sima, um…….<laugh> *birun pænjære miræv-e/ (Then Sima goes out (through) the window). Also, it is worth mentioning that two of the five errors made by F in the use of Persian genitive can be described as using the reverse order of Persian N + ADJ. The examples are:

 /*digær dokhtær væ maman-e dokhtær kheli narahæt, narahæt-æn/ (The other girl and the girl's mom are very upset).

 /inja, oh, fekr mikonæm... khune dær *shær bozorg, bozorg-e, æmma in khune.. dær, hehe hum,... *kuchik shær, **kushær-e hehehe …/ (Here, oh, I think the house is in a big city, but this house [is] in a small city, ??? .../ Here, apart from the items marked by (*), which are indications of the wrong use of the Persian genitive, the learner seems confused by the ordering of Persian N + ADJ, as she fails to utterly pronounce the adjective /kuchik/ before the noun /shæhr/ and produces a nonsense item, /kushær (**)! Such types of performance errors could best be attributed to the psychological factors involved.

Some of the data analyzed here provide some support for interactionist and sociocultural SLA theories. For example, it is in Task 6 where F gets positive feedback from P when she corrects herself uttering /mal-e pæræstar/:

 P: /movafegæm, um, ee, fekr mikoni ke in, in mashin mal-e mohændes ya mal-e pæræstar æst?/

 F: /bæle, um..., mashin-esh mohændes dær um, shar, shar, shar-e, æmma in mashin-e sabz ... pæræstar, mal-e, mal-e pæræstar, pæræstar-e/

Also, under the influence of her interlocutor, F was able to improve her use of the Persian genitive for preposition-NP relationship in Task 6:

 /movafegæm. fekr mikonæm ke tu-ye in khune, ah . . ./ (I agree. I think in this house . . .)

However, such interaction does not always result in accuracy as the phenomenon of "hypercorrection" is evident in F's utterance (Task 6) when, as a result of too much concentration on accuracy, she produced:

 /... in khune *næfær-e pænj zendegi mikonæn/

A thorough study of the obtained data can help us to gain a better understanding of whether it was the kind of target morpheme or the kind of task which had a positive impact on the learners' performance. In other words, can we attribute the variation of interlanguage production to the linguistic (i.e. the form of morpheme) or to the social context (i.e. the nature of task or the interlocutor)?

B. The Role of Task

As mentioned earlier in the paper, the tasks were assumed to elicit different aspects of IL performed by the participants of this study. This section looks at the data in order to explore the possible parts each task played in the variation. Table IV summarizes the pattern of Persian morphemes production by the participants in each of the six communication tasks.

A comparison of the participants' morpheme accuracy order indicates that the orders are not exactly the same for both Persian L2 learners, and P (more proficient) is just farther along the morpheme accuracy order than F (less proficient). Order analysis reveals that task constraints also play a part, in that the sequence appears to approximate one another for both learners, regardless of their proficiency level. For example, it is in Task 1 where both learners produce Persian morphemes accurately in the same order except for the possessive, which was not used by F at all. Additionally, task nature appears to contribute to the learners' rate of accuracy. As an example, Tasks 1, 2 and 6, which are more communication oriented, turned out to provide a better condition for P to accurately produce IL, while she did rather poorly in the narrative task.

As for their general level of accuracy in terms of the task, the data suggest that P showed the highest rate of accuracy in Task 2 (TLU = 5.77 out of 7), while her lowest rate of accuracy was in Task 4 (TLU = 2.55). F, on the other hand, gained the highest rate of accuracy in Task 1 (TLU = 3.61), while she performed the least accurately in Task 2 (TLU = 1.77). Fig. 2 illustrates the results:
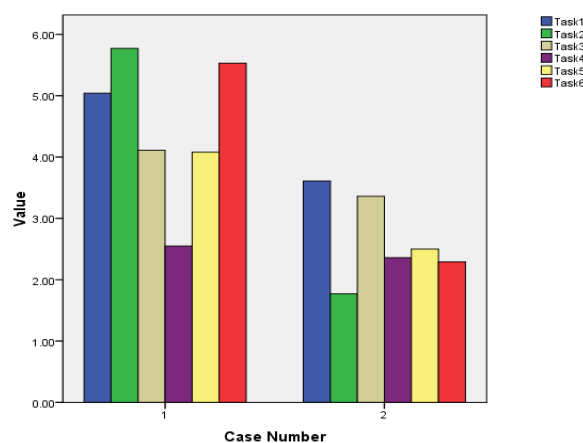

Fig. 2 Contrasting TLU values obtained by P (1) and F (2) in terms of Tasks 1-6

The results suggest that each of the learners treated Persian morphemes differently as they went through style shifting from Task 1 to Task 6. For instance, P used personal pronouns 100% correctly in Tasks, 1, 2, 4, 5, and 6, while F used the same morpheme with 100% accuracy in Tasks 1, 3, and 5. Such

findings may suggest something about the degree of difficulty of this Persian form, as the same task (Task 3) turns out to give rise to high performance on the part of one learner (P), while it appears to have completely the reverse impact for another (F). Also, in the areas of possessive and indefiniteness in Task 2, P was 100% accurate, whereas F used them 100% inaccurately. So, such findings may account for individual differences and the degree of internalization, more than the linguistic effects which are not in the scope of the present study.

TABLE IV
PERSIAN L2 ACCURACY ORDER OF MORPHEMES BY TASK

Task	Learner	Morpheme accuracy order	TLU
Interview	P	demonstrative/pronoun (1); genitive (0.75); copula (0.73); possessive (0.70); article/plural (0.43)	5.04
	F	demonstrative/pronoun/genitive (1); copula (0.50); article (0.11); plural (0.00); possessive (no use)	3.61
Question	P	possessive/article/demonstrative/pronoun/plural (1); genitive (0.40); copula (0.37)	5.77
	F	demonstrative/genitive (0.60); copula (0.57); possessive/article (0.00); plural/pronoun (no use)	1.77
Retell	P	demonstrative (1); genitive (0.85); possessive (0.79); pronoun (0.71); copula (0.42); plural (0.20); article (0.14)	4.11
	F	possessive/pronoun (1); copula (0.70); demonstrative/genitive (0.33); article/plural (0.00)	3.36
Narrative	P	pronoun/genitive (1); article (0.55); demonstrative (0.00); copula/possessive/plural (no use)	2.55
	F	copula (0.60); possessive/genitive (0.50); pronoun (0.43); demonstrative (0.33); article/plural (no use)	2.36
Jigsaw	P	possessive/pronoun (1); copula (0.82); genitive (0.71); plural (0.50); article (0.05); demonstrative (no use)	4.08
	F	pronoun (1); possessive (0.79); copula (0.60); article (0.07); genitive (0.04); demonstrative/plural (no use)	2.50
Comparison	P	possessive/pronoun (1); demonstrative (0.90); copula (0.83); genitive (0.80); plural (0.62); article (0.29)	5.53
	F	copula (0.87); demonstrative (0.73); genitive (0.33); possessive (0.14); article/plural (0.11); pronoun (no use)	2.29
Total		P: 27.08	
		F: 15.89	

Thus, it remains to investigate the tasks which gave rise to relatively the same rate of accuracy on the part of both learners. Then, I will examine whether or not the task accounts for the accuracy rate of certain morphemes. In doing so, what follows is examining the participants' performance in individual tasks to see what elements of the task contribute to the variation of learner language.

Interview and Question Tasks. Task 1 appears to be the most productive for both learners. Interestingly, the accuracy order is similar for both, too, except that F did not use the possessive which is generally among the most problematic areas for her. It can be interpreted, then, that in the interview she was able to avoid using possessives, while the other tasks required that she use it. Both learners gained their highest rate of accuracy for performing demonstratives, pronouns and genitive case in this

task. Also, it was in this task that both of them showed their lowest rate of performance in the use of indefiniteness.

In Task 2, F performs very poorly (TLU = 1.77 out of 7) and seems reluctant to continue the interaction by employing a lot of hesitations, long pauses and simplifications. As a result, she either avoids using plurals and pronouns, or drops copula in some occasions. However, this is not the case for P (more proficient) who probably feels confident enough to complete the task without relying on the interlocutor.

Retell and Narrative Tasks. It was in Task 3, retell, where F showed her second-best performance on Persian morphemes (TLU = 3.36). The comparison of order analysis indicates that demonstratives and genitives were more frequently and accurately used by P than by F in the retell task. Here, P can appropriately realize the important function of such morphemes for referencing to the entities and places in the story.

The use of pronouns and genitive is of high demand in Task 4, which was realized by P who gained a TLU rate of one for these two morphemes. On the other hand, there was no correct use of obligatory demonstratives in her production in Task 4. This is the case where, quite to the contrary, errors occur in producing regular morphemes that exist in both languages. Task 4 gave rise to the lowest (TLU = 0.33) rate of demonstratives accuracy for F, too.

Jigsaw and Communication Tasks. The accuracy order of the learners shows that both participants used possessive and pronoun the most frequently and accurately, and neither of them produced demonstratives in Task 5 (jigsaw). In Task 6, P appears to show one of her best performances (TLU = 5.53) suggesting that completion of such a task, which demands the use of academic language may be related to the level of proficiency. F (TLU = 2.29), on the other hand, might have found it too difficult to produce cognitively demanding language.

VI. DISCUSSION

Based on the findings, this study suggests the beginnings of a possible (yet-to-be systematically studied) sequence of an adult's acquisition of Persian L2 morphology. The accuracy orders to be laid out for this study are different from one participant to another. Thus, the data suggest that there are not common orders of accuracy between the learners of this study. This is a problem for SLA, where we look for systematicity and predictability. This individual difference could be because the learners are at different proficiency levels, and accuracy orders are not really acquisition orders, and/or it could be because there was not enough data from both learners. Further, it was found that Persian morphemes are ranked differently from the accuracy order of English L2 [18]. According to Krashen's proposed sequence of morpheme acquisition, English plural and copula are ranked first in the sequence of acquisition, followed by article and last of all possessive. On the contrary, for example, plural was ranked last in this study; i.e. it was the least accurately used morpheme. This may be attributed to the property of the Persian plural which is not always marked, e.g. there is no agreement between noun phrase and number in Persian, indicating "language specificity" [26]. Krashen [18]

had not included determiners (including demonstratives and referential determiners) in his study. So, the current findings do not match Krashen's, reflecting different typological natures of the two languages; thus, supporting the separate development of two languages.

As to compare these findings with the results of Keshavarz [26], again this study found no exact match to claim that L2 is definitely acquired in the same sequence as L1, but the similarity of sequence was greater than the result of the comparison with Krashen's study. Based on the findings in Keshavarz [26], the sequence of Persian morpheme acquisition for a bilingual child can be set out as: Copula → possessive/genitive → demonstrative/pronoun → plural → article. In the present study too, the indefinite article and plural (late acquisition) were ranked as the last two morphemes accurately produced by adult English 1- Persian 2 learners. Such a finding indicates that the morpheme orders for L2 are different from the orders of those same morphemes for L1, but there are some similarities. It can be interpreted, then, that these two Persian morphemes are the most difficult ones to be acquired by second language learners. Also, the morpheme accuracy order of F (less proficient) appears to match more perfectly the sequence proposed by Keshavarz. One may hypothesize that the transitional stages that adult learners go through may match the developmental stages for bilingual children. So, in setting out the sequence of acquisition, the proficiency level should be taken into account, too.

The predictions made by CA appear to be true about the category of personal pronouns where the participants performed with a high rate of accuracy. Interestingly though, one of the areas in which both learners demonstrated a high degree of difficulty is the indefinite article which is not predicted by CA. Here, it is worth to recall that accuracy order research was used to discount the impact of transfer, since learners from both Chinese and Spanish acquired English L2 morphemes in basically the same order [41].

The results of EA show that the errors made in the category of copula cannot be attributed to the interference from English, since this morpheme similarly exists and functions (as a verb and as auxiliary) in both languages, but could be either due to a simplification strategy, as it is assumed to carry more or less redundant information, or simply regarded as a performance error. However, most of the correct use of copula occurred when the subjects used the abbreviated form /-e/ for third person singular. It could be due to the fact that, as pointed out by Keshavarz [26], the short forms of the Persian copula are more systematic than the English copula form.

In the use of plural forms, the employment of a simplification strategy may be due to the great complexity of the target morpheme. This is what Keshavarz [26] refers to as "language specificity" in the development of certain morphemes. In other words, due to the fact that plural nouns in Persian do not always show number agreement with numerals and, on the other hand, pluralness is always marked in English, one could attribute the cause of such errors to language transfer from English L1 to Persian L2.

The results of EA indicate the involvement of other factors, as well. For example, errors in the use of genitive can be accounted for by an overlap of L1 interference and limited knowledge or incomplete instruction of L2. Also, one explanation for the use of reverse order of Persian N + ADJ is L1 interference. Interestingly, this pattern also resembles the Persian dialects spoken in the North of Iran. Could we possibly also attribute this effort to exposure to non-standard language deriving from interaction with those speakers?

Still, another factor merits attention and that is the role of the interlocutor who gives feedback to the learner. As the CARLA learner language section on learning in interaction points out, interactionist and sociocultural theories of SLA predict that this kind of scaffolding and support provided in interaction result in many opportunities for acquisition through the interactional sequence: error-> feedback -> uptake.

Knowing that the tasks were designed to elicit certain aspects of IL, the purpose of elicitation may call for the use of certain morphemes. The first two tasks, interview and question, are based on interaction between the interviewer (a native speaker of Persian) and the L2 learners; the last two task, jigsaw and comparison, are also communication-oriented requiring interaction between the two learners, while Tasks 3 and 4, recall and narrative, demand the learner's individual endeavor.

It was in Task 1 where both participants obtained the same rate of accuracy order for Persian demonstratives, pronouns, genitive, and indefiniteness equally. So, what is there that gives rise to such homogeneity? For one, it is the nature of this task (interview) that provides for the negotiation of meaning when the learners try to negotiate for the meaning of /pelan/, for example, and the interviewer helps them out in different ways. Such a context provides comprehensible input which will ultimately lead to acquisition. Also, the interviewer's role and actions seem to be very effective when she gives feedback to the learners, focusing on form so that the learners are able to notice the gap and finally the recasting leads to self-correction. There are some occurrences in Task 1 which testify to the scaffolding nature of the task (see the findings in EA section). Also, the nature of the task does not require the use of determiners like articles; thus, affecting the frequency of use which may impact the rate of accuracy as the learner attempts to concentrate on meaning rather than form. The second task, question, involves interaction, too. However, here it might be the role of interlocutor that accounts for variation. Contrary to Task 1, the interviewer does not intend to provide for scaffolding. This task particularly plays a role in language complexity on the part of the learner.

F's high overall performance in Task 3 could be explained by the fact that she was already exposed to the same prompts in Task 2 and can recall some parts of the language already exchanged. However, the two participants' variety of performance on demonstratives and genitive accounts for different degrees of internalization. Task 4, narrative, also demands "referential communication", where the learner is supposed to make acts of reference so that the listener can identify the referent and follow the story; thus, demanding for the use of pronouns and genitive. It is in Task 4, where in many instances, the learner avoids using demonstratives perhaps

because she simply takes it as redundancy when it does not affect communication, especially in a task of narrating a picture story where pictures by themselves are expressive of definite nouns.

Due to the nature of Task 5, Jigsaw, where the learners are supposed to talk about their own pictures, the findings suggest the most frequent and accurate use of possessives and pronouns by both participants. As this task is based on co-construction and peer-scaffolding, it can be hypothesized that F received a good deal of feedback through interaction with P. So, one may expect that F (less proficient) tends to approach her production to P's. Also, the nature of this task calls for focusing on meaning; thus, leading to a relatively lower level of accuracy. The last task, comparison, is also communication-focused and demands a high level of attention to meaning, as well as a high level of thinking such as inference, building and testing hypothesis.

Altogether, the question whether the interlanguage produced by the subjects of the study revealed any variation (Question # 2) was explored by a thorough examination of the learners' production based on the obtained quantitative measure of TLU. The learners' accuracy was variably affected by the task; thus, testifying to a variation in SLA. The cause of the variation evident in different tasks may be attributed to the purpose of elicitation assumed for each task. Each task provided obligatory contexts required for the production of certain morphemes. Nevertheless, since the findings were very complicated and there was a variety of causes and strategies involved in IL variation, no specific pattern could be identified to make a generalization on this account. As for the variables involved, the findings suggest that the task plays a more significant role, as opposed to the target morphemes. It can be concluded that the tasks which were more interaction-focused resulted in a higher percent of accuracies for several morphemes than tasks that had more focus on individual endeavor.

The author is well aware of the limitations of the study. For instance, the study seems to have been framed within a rather outdated approach to SLA. In this respect, the readers can refer to the second chapter of Odlin [42], which is an up-to-date review of SLA research on language transfer. Further studies can use the book to cite recent studies on language transfer. Furthermore, it is admitted that it makes it impossible to make claims about transfer when this study had only two participants, both coming from the same L1 background; i.e. English. However, since this study was only one part of a bigger project on a variety of less common languages, other researchers are encouraged to conduct more studies on alternative L1 languages, using the publically available data found online, to explore if the results conform to those of the present study.

VII. Conclusion

The findings of this study contradict the predictions made by CA. As the findings suggest that the types of errors in the use of Persian morphemes produced by the subjects of the present study are far more variable than the predictions of CA. Based on the findings, although the subjects showed some difficulty in producing Persian morphemes, their IL does not perfectly consist of the hierarchy predicted by CA; thus, discounting the impact of transfer. Although there are cases where transfer effects can be clearly pointed out, transfer is not the only factor that influences IL, as predicted by Selinker [4].

The accuracy order of L2 acquisition laid out in this study for Persian morphemes is different from the one proposed for English L2 by Krashen [18]. This provides support for the separate development of languages due to the phenomenon of language specificity [26]. The sequence set for Persian L2 was found to be closer to Persian L1 acquisition order in that indefiniteness and plural form are acquired late. This is in line with Krashen [18] in that the order of acquisition for L1 and L2 are different with some similarities. This study also found that the Persian L2 accuracy order for the less proficient learner matches more perfectly the Persian L1 order of acquisition. So, it can be hypothesized that the transitional stages of Persian L2 acquisition are similar to the developmental stages of Persian L1 acquisition.

EA informed us that a number of conceivable determinants might be at work. For example, there were incidents of erroneous utterances which could be attributed to the semantic or grammatical complexity of the morphemes, the application of the communication strategies, like simplification or avoidance strategy, or the developmental aspect of language acquisition, or because of confusion, memory lapses, and psychological states such as a lack of concentration, being under pressure or involved in strong emotion. Also, the results show that as predicted by the interactionist and sociocultural SLA theories, scaffolding provided in the interaction activities facilitates more accurate performance. Such a conclusion gives rise to the notion that if we cannot attribute the variation of interlanguage production to the linguistic (i.e. the form of morpheme), then maybe it is the social context (i.e. the nature of task or the interlocutor) which can account for the existence of variation in the system of learner language.

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