

# Different ways of looking at events: Foreign language learning and the acquisition of L2 action construal patterns

## Diferentes maneiras de observar eventos: o aprendizado de língua estrangeira e a aquisição de padrões de perspectivação conceitual de ações na L2

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**ABSTRACT** - Given the growing body of evidence on the interaction between language and thought, the overall aim of the current study is to verify whether there is a developmental pattern in the cognitive behavior of Persian L2 learners of English as a foreign language with regard to action construal level. Specifically, this study investigates whether acquiring English as a foreign language would affect the construal level of Persian EFL learners with different levels of bilingualism. A group of 40 Persian monolinguals, a group of 40 low-level Persian EFL bilinguals (bilinguals with low L2 proficiency), and a group of 40 high-level Persian EFL bilinguals (bilinguals with high L2 proficiency) were recruited. Participants were divided into the above groups based on their performance on Oxford Quick Placement Test (QPT). The participants' action construal level was measured using Behavior Identification Form (BIF) (Vallacher and Wegner, 1989). The results of a one way ANOVA and a post-hoc Tukey test indicated that while low-level participants behaved relatively similar to Persian monolinguals, the construal of high-level learners was significantly different from monolinguals and low-level bilinguals. These findings provide evidence of a developmental pattern regarding the acquisition of construal level, supporting the claim of previous research that learning an additional language can affect the construal of language learners.

**Keywords:** language acquisition, foreign language, construal, action construal, construal level.

**RESUMO** - Tendo em vista o crescente conjunto de evidências sobre a interação entre língua e pensamento, o objetivo geral deste estudo é verificar se há um padrão de desenvolvimento no comportamento cognitivo de aprendizes persas de inglês como língua estrangeira (ILE) no que diz respeito ao nível de perspectivação conceitual de ações. Especificamente, este estudo investiga se a aquisição do ILE afeta o nível de perspectivação conceitual de aprendizes persas de ILE com diferentes níveis de bilinguismo. Foram recrutados um grupo de 40 persas monolíngues, um grupo de 40 persas bilíngues com baixo nível em ILE (bilíngues com baixa proficiência na L2) e um grupo de 40 persas bilíngues com alto nível em ILE (bilíngues com alta proficiência na L2). Os participantes foram divididos em tais grupos com base em seu desempenho no teste de nivelamento Quick Placement Test (QPT), de Oxford. Mediu-se o nível de perspectivação conceitual de ações dos participantes por meio do formulário Behavior Identification Form (BIF), de Vallacher e Wegner. Os resultados do ANOVA de uma via e de um teste de Tukey post-hoc indicaram que os participantes com baixo nível tiveram comportamento relativamente semelhante ao dos monolíngues, ao passo que os aprendizes com alto nível demonstraram uma perspectivação conceitual significativamente diferente da dos outros grupos. Esses achados evidenciam um padrão de desenvolvimento na aquisição do nível de perspectivação conceitual, reforçando estudos anteriores que afirmam que o aprendizado de uma língua adicional pode afetar o nível de perspectivação conceitual de aprendizes de línguas.

**Palavras-chave:** aquisição da linguagem, língua estrangeira, perspectivação conceitual, perspectivação conceitual de ações, nível da perspectivação conceitual.

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## Introduction

A central question in the research on second language acquisition from a cognitive linguistic perspective is whether acquiring a second language can enrich or extend the number of ways in which language learners structure, describe, and perceive their realities. Current research in linguistic relativity has indicated that languages themselves might have at times inbuilt, unavoidable mechanisms for construing phenomena and events (Wolff and Holmes, 2011). In this sense, learning another language might equal learning to see things both linguistically and physically another way.

Generally speaking, construal refers to an individual's subjective interpretation or understanding of a phenomenon (VandenBos, 2015). It is claimed that the utterances that we use to talk about a phenomenon always represent a subjective account of the phenomenon since nothing purely objective exists (Gentner and Goldin-Meadow, 2003). In other words, languages act as lenses which highlight certain aspects of the phenomena and present the phenomenon in certain ways. According to action identification theory (Vallacher and Wegner, 1989), an action can be identified (construed) in different ways and arranged in a cognitive hierarchy, from low-level identities (construals in concrete terms) which specify the way an action is performed to high-level identities (construals in

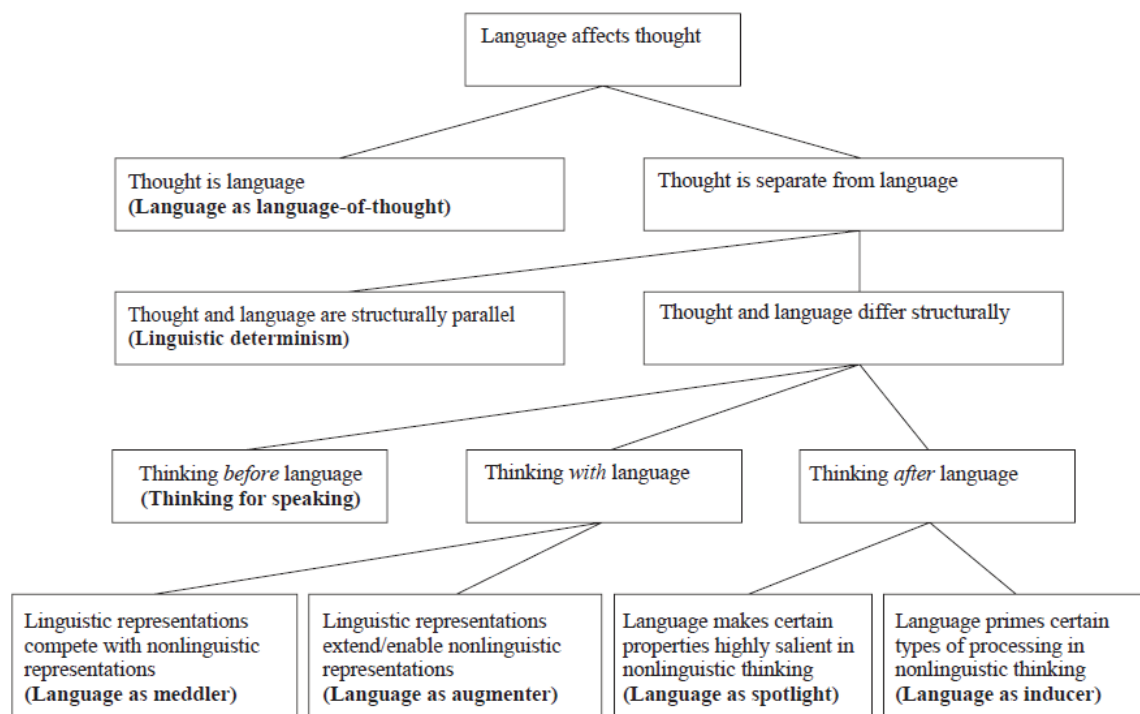
abstract terms) which specify the reason for which an action is performed or the effects of an action. For instance, whereas an individual might construe "making a list" as "writing things down" (a low level construal, how an action is performed), another individual might construe the same action as "getting organized" (a high level construal, why an action is performed). High level construals usually deal with the motives, consequences, and implications of actions, whereas low level construals usually focus on the mechanics and details of actions or the means of actions.

Research in both first and second language has provided a growing body of evidence supporting the interaction between language and construal across various domains. However, the effect of second language acquisition on construal level has not been investigated. The present study sets out to examine the impact of acquiring English as a foreign language on the action construal level of Persian EFL learners.

## Review of literature

### L1 Language-construal interfaces

Research within the language-thought paradigm has looked at the various interactions between languages and their speakers' cognitive processes (see Figure 1). The evidence from the research has related the cross-linguistic



**Figure 1.** The hypotheses on the possible interactions between language and thought.

Source: Wolff and Holmes (2011).

differences in the ways speakers of a language categorize, sort, and perceive various entities to the way in which conceptual representations are packaged and presented by the speakers of the language. The research has been extended to various domains such as time (e.g., Miles *et al.*, 2011), space (e.g., Haun *et al.*, 2011), motion (Athanasopoulos and Bylund, 2013), color (Athanasopoulos *et al.*, 2010), objects (Imai and Gentner, 1997), number (Gordon, 2004), and categorization (Lupyan *et al.*, 2007).

Research in the categorization domain has indicated that speakers of different languages might have different categorization preferences. In Korean, for instance, there are two words that correspond the English preposition *in*. The first one, *kkita*, is used for relatively tight fits, such as putting a CD in a CD player, whereas *nehta* is usually used for looser fits, for example putting fruit in a fruit bowl (Choi and Bowerman, 1991). In other words, tightness of a fit is salient in Korean, while it is less important in English. McDonough *et al.* (2003) found that while Korean-speaking adults had no difficulties in categorizing actions in terms of the tightness of fit, English-speaking adults had considerable difficulties in this regard.

In the domain of number, for instance, Lucy (1992) showed that the speakers of the languages where number is grammatically marked (such as English) considered the differences between the number of countable objects as more significant than the amount of uncountable objects. On the other hand, the speakers of such languages as Yucatec where there is not grammatical number-marking showed no such tendency. Nouns in Yucatec denote 'essence' rather than bounded units. Lucy also found that while the speakers of Yucatec sorted items based on their substance, the speakers of English tended to sort things based on their function or shape. He also reported that the speakers of Japanese, another language without grammatical number-marking, were equally likely to perceive increases in both countable and uncountable objects, while the speakers of English were more likely to perceive increase in countable objects.

Research has also provided evidence of cross-linguistic differences in motion and color cognition. For instance, Papafragou *et al.* (2008) compared eye movement of Greek and English speakers as they watched motion events. When the participants were required to prepare verbal descriptions, their eyes focused on the aspects of the events which were typically encoded in their native language. However, when they freely watched the ongoing events, their eye-movement patterns did not differ significantly. In the domain of color, the results of a study by Gilbert *et al.* (2006) indicated that participants' reaction times to the target presented in the right visual field were faster when the names of the target and the distractor colors differed, but their reaction times were not affected when the target was presented in the left visual field.

It was argued that the observed effect might be due to the fact that the stimulus presented in the right visual field is initially processed in the left hemisphere which is usually associated with language processing.

Findings from the current research has also provided evidence that languages can have specific effects on their speakers number processing. For instance, Frank *et al.* (2008) showed that members of the Pirahã, an Amazonian tribe, lacked a linguistic code for expressing exact quantity. In fact, they used the word *hói* to refer to quantities up to six items, *hoi* to refer to 4-10 items, and *baágiso* to refer to 7 to 10 items. Gordon (2004) investigated whether lacking words to encode larger numbers would have any effect on Pirahã speakers' performance while manipulating exact quantities. In a matching task, the speakers were presented an array of objects and were required to respond by providing a corresponding array of batteries. The results of the study indicated that the speakers failed to provide the exact number of batteries required, perhaps due to the numerical gap in the Pirahã language.

## **L2 Language-construal interface**

Researchers within the domains of bilingualism and second language acquisition have recently made attempts to investigate systematically the language-thought interfaces in second language (L2) speakers in a variety of perceptual domains such as categorization, number, grammatical gender, time, and color (Jarvis, 2011; Jarvis and Pavlenko, 2008; Rahimi and Tavakoli, 2016a, 2016b, 2017). Research has indicated that learning new languages can lead to the acquisition of new categorization systems (Athanasopoulos, 2007; Cook *et al.*, 2006). For instance, it has been shown that speakers of Japanese, a language in which nouns are mass-like, tend to categorize items based on their material or substance, while speakers of English, a language in which number is grammatically marked and count nouns are distinguished from mass nouns, usually prefer to categorize objects based on their shape (Imai and Gentner, 1997). Using an object classification task, Athanasopoulos (2007) investigated the categorization preferences of Japanese L2 learners of English. The results of the study indicated that Japanese-English bilinguals shifted their categorization preferences towards the L2 pattern as a result of the acquisition of the second language. The observed behavior was attributed to the count-mass grammatical conceptualizations in the two languages. In another study, Cook *et al.* (2006) found that while English monolinguals tended to categorize items based on their shape and Japanese monolinguals tended to categorize items based on their substance, Japanese-English bilinguals used both systems for categorizing items, providing further evidence for the claim that learning a language can have an impact on the language learners' cognitive processing beyond language.

Some studies have documented the effect of language on construal in the domains of number and grammatical gender. The acquisition of grammatical gender has been shown to have an influence on the learners' perception of objects (e.g., Forbes *et al.*, 2008). For example, the results of a study by Kurinski and Sera (2011) showed that as English L2 learners of Spanish acquired grammatical gender, their categorization tendencies also changed. Specifically, participants were more disposed to attributing male/female voices based on the Spanish grammatical gender system, even when they used English to do the tasks. The effect of learning a second language on the number cognition of learners has also been observed. For instance, Athanasopoulos (2006) compared English monolinguals with Japanese L2 learners of English. Athanasopoulos found that while intermediate Japanese L2 learners of English behaved like Japanese monolinguals in that they tended to notice the increases in both countable and uncountable items, advanced Japanese L2 learners of English acted more like English monolinguals in that they were more likely to notice increase in countable items. Athanasopoulos argued that these findings support the idea that acquiring a second language can alter L1 cognitive tendencies.

Research has also provided supporting evidence of cognitive shift in bilinguals in time and color domains. In the domain of time, for instance, it has been shown that while in English horizontal metaphors are usually used to show the flow of time, in Mandarin vertical metaphors are employed to express temporal succession (Boroditsky, 2001). The results of the study by Miles *et al.* (2011) showed that Mandarin–English bilinguals employed both horizontal and vertical time lines in contexts where linguistic content was minimized. In color domain, a number of studies have suggested that acquiring a second language might lead to changes in color perception along the color spectrum. For example, taking the fact that Greek distinguishes a darker shade of blue called *ble* and a lighter shade of blue called *ghalazio*, Athanasopoulos (2009) investigated the color categorization of Greek L2 learners of English. Results of the study indicated that the bilinguals' distinction between light and dark blue shades weakened as their level of bilingualism increased (see also Athanasopoulos *et al.*, 2010). In a similar study, Athanasopoulos *et al.* (2011) investigated Japanese–English bilinguals' sensitivity to the light blue/blue distinction, which showed that the bilinguals who used Japanese more frequently distinguished light blue and blue better than those who used English more frequently.

The interaction between language and construal has also been confirmed in studies on motion domain. A number of studies have been conducted based on the idea that the speakers of languages with aspectual marking (e.g., English, Spanish) have a tendency not to mention the endpoint or goal of an event, whereas the speakers of

the languages where aspectual marking is absent (e.g., German, Swedish) have a reverse tendency (Athanasopoulos and Bylund, 2013). Bylund, Athanasopoulos, and Oostendorp (2013) tested the hypothesis by measuring motion endpoint behavior of the speakers of Afrikaans (a non-aspect language) through a nonlinguistic similarity judgment task and a linguistic retelling task. They compared the behavior of the Afrikaans speakers with that of the Swedish speakers (another non-aspect language) and English speakers (an aspect marking language). Results indicated that the Afrikaans speakers' encoding patterns approximated Swedish patterns, but significantly diverged from the English patterns.

The results of these studies suggest that language can have a significant effect on the cognitive processing of L2 learners. While the literature provides supporting evidence for the impact of language on the L2 learners' construal, no studies have dealt with the interaction between L2 learning and the construal level of L2 learners.

## Present study

As mentioned above, no studies could be found in the literature which investigated the effect of language acquisition on the construal level of language learners. Given the evidence on the impact of language on construal, to test the possible link between language and level of construal, we first tried to address an alternative explanation for our anticipated results. Specifically, we tried to control self-esteem as an influential factor. Having addressed the alternative explanation, we gauged participants' tendencies toward high- versus low-level action construal. In other words, we tried to see whether acquiring English as a second language could cause any significant difference in the action construal level of the participants with different levels of bilingualism.

## Research aim and hypothesis

The present study has the following aim:

To evaluate the effect of acquiring English as a foreign language on the action construal level of Persian EFL learners.

Based on the evidence from the previous research, it is hypothesized that acquiring English can exert a significant influence on Persian EFL learners' construal level.

## Method

### Participants

The original sample included 45 Persian monolinguals, 45 Persian low-level L2 learners of English, and 45 Persian high-level L2 learners of English. They were



both males ( $n=78$ ) and females ( $n=57$ ). Nine participants had their data discarded due to low self-esteem measures either on the Rosenberg Self-Esteem Scale ( $n=5$ ) or State Self-Esteem Scale ( $n=4$ ). The final sample consisted of 69 males and 57 females. The participants' age ranged from 18 to 39 ( $M_{\text{monolinguals}}=27.78$ ;  $SD=5.42$ ;  $M_{\text{Low-Level bilinguals}}=28.82$ ;  $SD=6.04$ ;  $M_{\text{High-Level bilinguals}}=29.31$ ;  $SD=5.53$ ) (see the next section for the operationalization of bilingualism). All participants reported that they had learned English in a Persian monolingual context.

### **Instruments and procedures**

We sought evidence of meaningful differences between three groups with different levels of bilingualism in terms of their level of action construal. Participants were required to complete the following questionnaires:

Behavior Identification Form (BIF) (Vallacher and Wegner, 1989) is a 25-item dichotomous-response questionnaire that assesses individual differences regarding the level of action construal. For each item, respondents read about an action (e.g., "ringing a doorbell", "Making a list", or "Reading") and mark one of the two construals which more appropriately describe the action. The choices correspond to either low-level construals (e.g., "moving your finger", "Writing things down", or "Following lines of print", respectively) or high level construals ("seeing if someone's home", "Getting organized", or "Gaining knowledge", respectively). High-level construals were scored as 2, and low-level construals were scored as 1. Each respondent's responses were summed to provide a BIF score. A translated version of the questionnaire was used for Persian Monolinguals.

*The Rosenberg Self-Esteem Scale (RSES)* (Rosenberg, 1979) is a 10-item Likert scale. It is a well-validated measure of global self-esteem, which is perhaps the most widely-used self-esteem measure in social science research. Respondents show their agreement with each item (e.g. On the whole, I am satisfied with myself) using a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). Items were scored as follows: for items 1, 3, 4, 7, 10: Strongly Agree=3, Agree=2, Disagree=1, and Strongly Disagree=0. For items 2, 5, 6, 8, 9 (which are reversed in valence): Strongly Agree=0, Agree=1, Disagree=2, and Strongly Disagree=3. Each respondent's responses were summed to provide an RSES score. A translated version of the scale was used for Persian Monolinguals.

State Self-Esteem Scale (SSES) (Heatherton and Polivy, 1991) is a 20-item Likert scale that measures a participant's self-esteem at a given point in time. The 20 items are subdivided into 3 components of self-esteem: performance self-esteem, social self-esteem, and appearance self-esteem. Respondents show their agreement with each item (e.g. I feel confident about my abilities) using a 5-point scale ranging from 1 (not at all) to 5 (extremely).

Items were scored as follows: for items 1, 3, 6, 9, 11, 12, 14: Not At All=1, A Little Bit=2, Somewhat=3, Very Much=4, Extremely=5. For items 2, 4, 5, 7, 8, 10, 13, 15, 16, 17, 18, 19, 20 (which are reversed in valence): Not At All=5, A Little Bit=4, Somewhat=3, Very Much=2, Extremely=1. Each respondent's responses were summed to provide an SSES score. A translated version of the scale was used for Persian Monolinguals.

Two methods have been frequently used to measure language proficiency: self-reports (e.g. Bylund and Athanasopoulos, 2014) and formal tests (e.g. Bylund and Jarvis, 2011 (Bylund & Jarvis, 2011)). Scholars have questioned self-report surveys as valid and reliable measures of language proficiency (e.g. Dörnyei, 2001) mainly due to the subjectivity inherent in self-reports, as participants may over or under report their ability. Another criticism against self-reports is participants' insufficient experience in self-assessment. Considering the criticism leveled at self-report, in the present study, Oxford Quick Placement Test (QPT; Oxford University Press, 2001) was used to divide participants into the three groups. Monolingualism has been operationalized as QPT scores between 1 and 13 ( $M=10.32$ ;  $SD=2.53$ ). The QPT scores for low-level bilinguals ranged from 18 to 31 ( $M=23.48$ ;  $SD=3.12$ ), and high-level bilinguals from 42 to 60 ( $M=55.5$ ;  $SD=3.12$ ).

We sought evidence of meaningful differences between the groups in terms of their level of action construal. We also addressed an alternative explanation for our anticipated results. According to action identification theory (Vallacher and Wegner, 1987), individuals often move to low-level action construals if they receive failure feedback on their performance. Vallacher and Wegner (1989, p. 669) proposed that "the low-level agent can be looked on as a chronic klutz, someone who commonly makes action errors and so must keep focusing on the details of action." According to this perspective, variability in self-esteem (reflecting an individual's variability in self-perceived ability in performing actions), rather than variability in English language competence (as presently proposed), could be the cause of any relation found between learning English as a foreign language and level of action construal. As a result, we also assessed and controlled statistically for well-validated measures of self-esteem and state self-esteem.

Individuals were met personally and were asked whether they were willing to participate in the study. Those who agreed comprised the original sample. All participants gave informed consent. In individually administered data collections, they completed a demographic questionnaire, BIF, RSES, and SSES. Data on action construal level were elicited by means of BIF. RSES and SSES were administered to provide measures of self-esteem and state self-esteem, respectively. Participants were allowed to have short intervals between answering the questionnaires. Each data collection lasted for about 15 to 25 minutes.

BIF, RSES, and SSES have been shown to be reliable and valid measures of action construal, self-esteem, and state self-esteem. In the present study, the overall reliabilities of the BIF and SSES were 0.76 and 0.82, respectively, as estimated by the Cronbach's alpha. The overall internal consistency of RSES using Cronbach's alpha was 0.71. Exploratory Factor Analysis (EFA) was carried out to examine the construct validity of the three questionnaires. The analysis of the BIF yielded one factor, namely construal level. Analysis of the RSES revealed two sub-scales of self-worth and self-acceptance. The result of the analysis of the SSES indicated three factors: social self-esteem, appearance self-esteem, and performance self-esteem.

In a series of studies, Rahimi (2017a, 2017b, 2017c) measured the reliability and validity of Persian translations of the three questionnaires. The validity of the Persian-language versions of the three questionnaires was obtained using Exploratory Factor Analysis. The scales were administered to 215 Persian monolinguals. The analysis of the Persian translation of BIF yielded one factor, namely construal level. The result of the analysis of the Persian translation of RSES indicated two factors: self-worth and self-acceptance. Analysis of the Persian translation of SSES revealed three sub-scales of social self-esteem, appearance self-esteem, and performance self-esteem. The internal consistency of the BIF was found to be 0.84, as estimated by the Cronbach's alpha. The Cronbach's alpha coefficients for RSES and SSES were 0.76 and 0.79, respectively.

## Results

The result of the analysis of the data collected on the self-esteem scales is presented in Table 1.

As Table 1 indicates, the majority of Persian monolinguals had a high level of self-esteem based on RSES. Two monolinguals had low scores (scores below 15) on the scale. Regarding bilinguals, the results show that, except for four low-level bilinguals, all other participants had high scores on the scale. The result of the analysis of the data collected on the SSES show that, except for four monolinguals, all others had high levels of state

self-esteem (score above 60). All bilinguals, except for one low-level bilingual, also showed high levels of state self-esteem. These results indicate that prospective low-level action construals cannot be accounted for through participants' focusing on action details as a result of low levels of self-esteem. The data from the participants whose scores on the RSES and SSES were below 15 and 60 respectively were not considered for further analysis.

Prior to comparing the performance of bilinguals and monolinguals on the BIF, it is important to check the assumptions of parametric tests before selecting an appropriate statistical test. Assumptions of using parametric statistical tests (in this case one way ANOVA) are: normality of distribution, homogeneity of variances, having at least interval variables, and independence of measurements (Field, 2013). To evaluate the first assumption, the values of kurtosis and skewness and their corresponding z-scores for both bilinguals and monolinguals were calculated (see Table 2).

Considering monolinguals, the z-score of skewness was  $Z_{skewness} = 0.224$  and the kurtosis z-score was  $Z_{kurtosis} = 0.001$ . Low-level Bilinguals' z-score of skewness was  $Z_{skewness} = 0.342$  and their kurtosis z-score was  $Z_{kurtosis} = 0.317$ . High-level Bilinguals' z-score of skewness was  $Z_{skewness} = 0.480$  and their kurtosis z-score was  $Z_{kurtosis} = 0.535$ . Comparing the z-scores against the known values for the normal distribution indicates that value greater than 1.96 are significant at  $p < .05$ . As it is evident, none of the z-scores are greater than 1.96, which indicates a normal distribution of the scores.

To evaluate the second assumption (i.e. homogeneity of variances), Levene's test was carried out. The results of the analysis are shown in Table 3.

As Table 3 shows, the Levene's test is non-significant at  $p \leq .05$ . Then, it can be concluded that the difference between the groups' variances is not significant and roughly equal and therefore the assumption of homogeneity of variances is tenable. To further evaluate the homogeneity of variances, Hartley's  $F_{max}$  or variance ratio was obtained ( $F_{max} = 1.413$ ). Considering the group sizes ( $n = 41, 40, \text{ and } 45$ ) and the number of variances compared ( $n = 3$ ), the critical value is approximately 1.85. It is evident that the variance ratio is lower than the critical

**Table 1.** Participants measures on the self-esteem scales.

	RSES			SSES		
	n	M	SD	n	M	SD
Monolinguals	43	22.09	4.50	43	79.73	9.67
L bilinguals	41	22.9	3.2	44	77.42	10.58
H bilinguals	45	22	4.46	45	80.26	8.29

**Table 2.** Skewness and Kurtosis values.

	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Monolinguals	-.083	.369	-.734	.724
LL Bilinguals	-.128	.374	-.233	.733
HL Bilinguals	.170	.354	-.732	.695

**Table 3.** Levene's test results.

	Levene Statistic	df1	df2	Sig
Based on Mean	.534	2	123	.588
Based on Median	.313	2	123	.732
Based on Median and with adjusted df	.313	2	117.070	.732
Based on trimmed mean	.553	2	123	.577

**Table 4.** Descriptive statistics of the scores on the BIF.

	N	Mean	Std. Deviation	Std. Error Mean
monolingual	41	40.804	3.226	.503
LL bilingual	40	40	2.837	.448
HL bilingual	45	34.177	3.372	.502

value. It means that the ratio concurs with Levene's test, hence confirming the homogeneity of variances.

The assumption that the data should be measured at least at the interval level is met since action construal level measurements through BIF can be considered as interval. The assumption of independence of measurements is clearly satisfied since data collections were administered individually.

In order to find out the two groups' action construal level tendencies, the mean values for their performance on the BIF was calculated. Table 4 indicates the descriptive statistics of the three groups' scores on the BIF.

As Table 4 shows, low-level bilinguals and monolinguals have similar means. However, high-level bilinguals have a much lower mean than both monolinguals and low-level bilinguals. It means that, on average, while monolinguals and low-level bilinguals construed actions on almost the same levels ( $M_{Monolingual} = 40.8$ ,  $M_{LL Bilingual} = 40$ ), high-level bilinguals construed action on a much lower level ( $M_{HL Bilingual} = 34.1$ ). In other words, it seems that the higher level of bilingualism has induced lower-level action construal in the participants.

The assumptions of the parametric tests having been met, a one-way ANOVA was run to evaluate the significance of the difference between the means of the three groups. Table 5 shows the results of the ANOVA run for evaluating the equality of means.

As Table 5 shows, there was a significant effect of language acquisition on construal level for the three groups,  $F(2, 123) = 56.74$ ,  $p < 0.001$ . A Post-hoc comparison of the means, using Tukey test, was also applied to determine the precise locations of significant differences.

The post-hoc comparison indicated that the mean score of high-level bilinguals ( $M = 34.17$ ,  $SD = 3.37$ ) was significantly different from both monolinguals and low-level bilinguals. However, the performance of monolinguals ( $M = 40.8$ ,  $SD = 3.22$ ) did not significantly differ from the performance of low-level bilinguals ( $M = 40$ ,  $SD = 2.83$ ). The obtained effect size value ( $r = 0.692$ ) is large according to Cohen's thresholds for interpreting effect size. These results indicate that not only high-level bilinguals construe actions in significantly lower levels in comparison to monolinguals and low-level bilinguals, but also the observed effect has a considerable magnitude.

**Table 5.** The result of the ANOVA.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1135.785	2	567.892	56.742	.000
Within Groups	1231.017	123	10.008		
Total	2366.802	125			

**Table 6.** The results of Multiple Comparisons using Tukey HSD.

(I) comcom	(J) comcom	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Monolingual	Low-Level Bilingual	.80488	.70307	.489	-.8631	2.4729
	High-level Bilingual	6.62710*	.68302	.000	5.0067	8.2475
Low-Level Bilingual	Monolingual	-.80488	.70307	.489	-2.4729	.8631
	High-level Bilingual	5.82222*	.68747	.000	4.1913	7.4532
High-level Bilingual	Monolingual	-6.62710*	.68302	.000	-8.2475	-5.0067
	Low-Level Bilingual	-5.82222*	.68747	.000	-7.4532	-4.1913

Note: (\*) The mean difference is significant at the 0.05 level.

## Discussion

The current study focused on the question whether the acquisition of a second language would affect the construal level of language learners with different levels of bilingualism. Specifically, the current study sought to investigate how the acquisition of English as a foreign language would affect the action construal level of high-level and low-level Persian L2 learners of English. The major finding in the present study is that action construal level is influenced by the level of bilingualism. This finding is in line with previous research on language-thought interaction (e.g. Bylund and Athanasopoulos, 2014), which found language acquisition can have an impact on the cognitive behavior of language learners. Previous L2 studies examining the impact of second language acquisition on the construal of learners (e.g. Athanasopoulos, *et al.*, 2011; Bylund *et al.*, 2013; Kurinski and Sera, 2011; Miles *et al.*, 2011) have shown that acquisition of construal modes demonstrate developmental patterns across groups of learners with different levels of bilingualism. The findings from the present study provide evidence that while the performance of low-level bilinguals approximated that

of the monolinguals, the performance of high-level bilinguals diverged significantly from both groups, suggesting that acquiring English has led to cognitive restructuring (Athanasopoulos, 2011; Park and Ziegler, 2014). While monolinguals and low-level bilinguals were found to construe actions in relatively high levels, high-level bilinguals showed significantly lower level action construals.

Research has also indicated that bilingual speakers might have heterogeneous construals in specific contexts. For instance, Park and Ziegler (2014) showed that the following classification patterns emerged as bilingual participants categorized spatial motions: creating a new unitary category distinct from the monolingual group, combining characteristics of both language-specific semantic distinctions to form a hybrid, showing an in-between performance, and patterning with either L1-based or L2-based concepts. These results indicate that bilingualism may result in the adjustment of bilinguals' sensitivity to their native language construal patterns. In another study, Li *et al.* (2011) conducted four experiments to see whether specific spatial frames of reference in language would prime corresponding spatial conceptualization, specifically in non-linguistic spatial tasks. The participants



were members of a Mayan population whose language (Tseltal) uses geocentric spatial frames. The results of their study indicated that the participants at times used egocentric view in dealing with spatial tasks, indicating that spatial processing was not dictated by linguistic encoding. In the present study, a qualitative analysis of the data indicated that four high-level bilinguals construed actions in a higher level than low-level bilinguals. This observation reveals that the ability to construe actions in a high-level still exists in high-level bilinguals and under specific circumstances the bilinguals might shift to that mode of processing. This suggests that bilinguals have not lost their ability of other processing modes or construal frames but only they display a preference towards certain behaviors (Choi and Hatrup, 2012).

Although some studies have reported that bilinguals maintain two separate cognitive modes which correspond to their L1 and L2, and which are accessed according to the contextual constraints (Sachs and Coley, 2006), the results of the current study provide contrary evidence for this hypothesis. The convergence of the bilinguals' conceptual systems found in the present study does not provide support for the "modular" view which contends that cognition is unaffected by bilingualism (e.g., Papafragou *et al.*, 2002). Instead, our results are more consistent with the Whorfian view, which argues for the influence of language on thought. This reflects the dynamic nature of the bilingual mind, showing that the restructuring of bilingual systems is an ongoing, developmental phenomenon (Brown and Gullberg, 2013; Pavlenko, 2011) as opposed to a finite outcome (e.g., Ameel *et al.*, 2009). Thus, the L1–L2 convergence observed among the bilinguals in the current study should not be viewed as a permanent state, but rather as an intermediate stage in the bilingual development (Brown and Gullberg, 2013, p. 14). Comparing action construal level of English monolinguals against the results of the present study can clarify the point whether the observed state in high-level bilinguals is only an interlanguage state or a target language state.

The findings are relevant to second language learning in that second language learners are to cope with new action construal patterns. In other words, they should try to break some of their cognitive habits (Odlin, 2005). In this regard, it seems logical that the more these habits are entrenched, the greater the challenge the learners would face in breaking the habits would be. The findings also suggest that learning a new language includes learning or acquiring new construal patterns as a kind of competence. Learning the new construal patterns can pose some difficulties for language learners and this can even be consequential when language learners are expected to perform against their construal pattern. Ramirez (2006) found that beginner Mexican learners of English had considerable difficulties in dealing with manner-of-movement verbs

in English. Choi and Lantolf (2008) also found that both English-speaking learners of Korean and Korean-speaking learners of English experienced difficulties in using L2 construals of the manner of movement.

Research has also indicated that variability in the level of action construal is related to variability in such self-regulating processes as feedback-seeking (Freitas *et al.*, 2001), action initiation (Dewitte and Lens, 2000), decision making (Trope *et al.*, 2007), person perception (Nussbaum *et al.*, 2003), and self-control (Fujita *et al.*, 2006). For instance, Freitas *et al.* (2001) found that individuals who chronically used low-level construals had less interest in negative feedback and greater interest in downward social comparison (DSC). Assuming this, it can be hypothesized that speakers of the languages with relatively lower action construal levels might show a greater interest in DSC and less interest in negative feedback. Future research can look at such self-regulating process from a cross-linguistic construal-level perspective.

The effect of second language acquisition on cognitive restructuring has been carefully examined considering various influential factors, such as frequency of language use (Bylund *et al.*, 2013), language proficiency (Park and Ziegler, 2014), length of cultural immersion (Athanasopoulos, 2009), and age of acquisition onset (Bylund and Jarvis, 2011). For example, Bylund *et al.* (2013) tested whether the speakers of Afrikaans (a non-aspect language) tended to encode event endpoints more than the Afrikaans L2 learners of English (an aspect language). Results of the study indicated that the variation among the Afrikaans speakers could be partially accounted for by the speakers' frequency of use of English, in a way that endpoint behavior of the bilinguals who used English more frequently was more similar to English speakers. Thus, future studies on the interaction between second language acquisition and construal level will benefit from controlling the above factors to establish the extent to which action construal level is a function of the factors.

Considering the lack of research on the impact of language learning on the level of construal, it is yet too early to make any conclusive remarks on the role of language acquisition on the construal level of language learners. Thus, more research across other languages and groups of speakers is warranted to better understand the impact of acquiring a second language on the language learners' level of construal.

## Conclusion

In this paper, we adopted a bilingual perspective of language-thought interaction in terms of construal level to investigate how the acquisition of a foreign language influences cognition of actions among Persian EFL learners. The findings of the present study confirm the documented evidence on the relationship between

level of L2 proficiency and the acquired cognitive behavior (e.g. Athanasopoulos, 2009). The present results show that high-level Persian-English bilinguals are more prone to construe actions in a lower level than Persian monolinguals and low-level Persian-English bilinguals. Moreover, the results indicate that the observed behavior is modulated by the learners' level of bilingualism, such that the cognitive behavior of higher level learners was significantly different from both low-level learners and monolinguals.

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