Post-Nominal Modification: A Contrastive Investigation of Persian, Non-Native and Native Academic Writters

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Abstract: The research presented in this study aims to investigate one of the most significant issues of writing skill, post-modification, often causing difficulties for EAP students struggling for making complex constructions in their academic writings. A contrastive analysis procedure is applied which involves discovering how Post-Nominal Modifications (PNMs) in English and Persian languages compare and how writers with differing language backgrounds manage to use complex constructions. Data composing of academic articles in the field of psychology written by three groups of writers were randomly selected for comparison. The quantitative analysis of data indicated that non-native writers displayed frequency differences in using PNMs compared with native academic writers. On the other hand, data examination revealed, although Iranian writers faced with difficulty in creating complex constructions, frequency studies did not show any significant differences between their writings and native writers. The explanations for this surprising finding were provided evidencing the effective role of L1 and faulty constructions were examined qualitatively demonstrating clear traces of L1 interference resulting in grammatical mistakes observed in the inter-language productions of Iranian EAP writers.

Key words: CA, post-nominal modification, finite clauses, relative clause, appositive clause, non-finite clauses

INTRODUCTION

The ability to write properly is an important skill for producing research in English and achieving success in scientific explorations. It is however, as Myles (2002) states, not a naturally acquired skill; it is usually learned or culturally transmitted in terms of a set of practices in formal instruction settings and other similar environments. The skill usually involves composing, which implies the ability to arrange information in the form of narratives, descriptions, arguments and explanations. Composing various texts is a quite complex task which can create problems especially for EAP students who attempt to write as L2 learners of English in academic contexts. Formulating new ideas can be difficult because it involves transferring information which is much more complex than writing as telling, an activity which requires conscious efforts and practices in composing, developing and analyzing ideas (Myles, 2002).

Several research studies have been conducted to show discrepancies between native and nonnative productive performances. In the field of second language writing, there has been considerable research on assessment, error correction, instructional practices, rhetorical as well as linguistic features of discourse and composing processes. One major area of difficulty for non-native writers of English lies in the post modified nominal constructions (henceforth PNM) which display significant differences between English and Persian. Expanding nouns with pre and post-modification is a feature of English noun phrases. As Tribble (2004) states, it has a central importance in scientific discourse. It is a particular characteristic in academic texts particularly at higher levels of language proficiency. Begona (1995) believes that nominal phrases are a productive area of English grammar, which may demonstrate important principles of linguistic creativity and should receive scholarly attention. Awareness of the use of P.N.M in English written academic articles could be beneficial both for L2 writers and ESP program designers.

Modification describes the grammatical process in which the semantic value of a word (usually a noun, verb, or an adjective) can be modified or changed by the addition of another word or phrase (usually an adjective or an adverb) (Campsall, 2006). Nouns can be both pre-modified (by adjectives, e.g., 'a tall dark stranger' or other nouns, e.g., 'an oven glove') as well as post-modified (by a phrase or clause, e.g., 'the man with an ice-cream'). In addition, Prepositional phrases can act as modifiers when they act as the complement of a verb. In effect,

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pre-modification includes all the describing constituents placed before the head, other than determiners (e.g., the tall girl) and post-modification comprises all the modifying constituents placed after the head (the tall girl standing in the corner). Bruti (2003) states that postmodification of a noun phrase is typically done by phrases or clauses and not by specific word classes. Quirk *et al.* (1985) define post-nominal modification as a post-modifying construction following a noun or a nominal. They comprise three main categories: finite clauses, non-finite clauses and prepositional phrases.

In order to study the difficulties EAP students might face in dealing with post-modification, contrastive analysis is applied which involves discovering how PNMs in English and Persian languages compare. As for contributions to the field, Kezeszowski (1990) points out that contrastive analysis is one of the several approaches to linguistic comparisons connected with identifying and describing similarities and differences which exist among languages rather than grouping them genetically and typologically. Johansson (1990) maintains that for the purpose of developing writing ability, contrasting the two languages in question can shed light on the task, a procedure which involves: the systematic comparison of two or more languages, with the aim of describing their similarities and differences. To contrast languages, we determine a criterion for analysis, or as Kezeszowski (1990) calls it tertium comparetionis, because two objects may be similar or different depending on the category or the common platform of reference chosen for comparison. Different tertia comparetions are used in lexicology, in phonology and in syntax determined by specific linguistic models employed and specific levels of analysis embraced. The constituents of two pieces of texts across two given languages used for quantitative contrastive studies may be chosen for comparison only on the grounds that they represent the same register, the same style, the same literacy genre, or any other ground which the common platform of reference motivating the comparison demands. The results of the comparison may show some fixed frequency patterns of the occurrence of particular linguistic forms which may follow a statistical norm characterizing a specific genre, style or register of discourse.

As for the empirical investigation of modification, Ostrowski (2000) presents a descriptive account of various types of Adjective pre and Post-modification (AJPs). Explaining the distribution of AJP types and functions, she demonstrates that complex structures are rare in actual language use and that there exist three different ways of adjectival modification while spoken language has only two types, namely, pre and post-modification. Thornton *et al.* (1999) study the

modifiability of complex noun phrases and demonstrate how Spanish and English speakers use pragmatic information to comprehend ambiguity that is present in such discourse constructions. The similarities and differences in ambiguity resolution across the two languages offer some important insights into theories of sentence processing. The first experiment they conducted demonstrates that NPs which have received relatively specific prior modification are less likely to take additional modification than NPs with less specific modification. Their second and third experiments describe modifiability effects of both languages using a self-placed reading task.

Begona (1995) conducts a corpus-based contrastive research on the structure of the nominal phrases in written scientific English and Spanish. The goal of the analysis is to highlight the special characteristics of nominal compounds composed of a single modifier and multiple pre-modifying elements. The study is concerned with the lexical components which occur in noun pre-modification, e.g., those nominal phrases composed of different combinations of adjective(s) and noun(s). Their reearch: classifies different pre-modification structures considering the grammatical category, order of the components in English and their equivalents in Spanish and identify the most productive structures and gives a systematic description for the structures which can not have pre-modification.

The present study is intended to investigate post nominal modification in academic texts written by native, non-native non-Iranian and Iranian EAP writers of English to develop insights in how native and non-native academic writers compare. More specifically, this study is an attempt to examine firstly whether there are PNM elements commonly used in academic contexts by native and non-native speakers of English and secondly to see whether there are any significant differences between the two groups regarding the frequency of use of post nominal modifying elements. The major question at issue is whether there is a difference in the pattern of use of the post-nominal modifying elements among native, Iranian non-native and other non-native writers of English.

MATERIALS AND METHODS

Procedures of data collection and analysis: PNM mechanism is an important characteristic of academic writing which is utilized to condense information and make sentences more economical, vivid and interesting to read. The present study examines the differences in the frequency and patterns of use of the post-nominal modifying constructions in a corpus of sixty English articles in the field of psychology randomly selected from the available published articles on the internet via

http://www.rose-net.co.ir/. they have been written by three groups of academic writers: native, Iranian non-native and non-Iranian non-native writers of English. The discipline of Psychology is selected for the fact that it contains a relatively wide range of complex structures and its genre of language is least formulaic as is the case of mathematics, physics, statistics, etc. Twenty native written English articles were selected from Elsevier journal titles on psychology in different subfields of psychology, available on line at www.sciencedirect.com. Another set of twenty articles were randomly selected from the same source, Elsevier journal titles on psychology with non-native writers. For selecting published written English articles written by Iranian writers the site of psychology www.iranpa.org. was accessed. The size of the corpus was as long as two thousand words in the introductory parts of the articles which were examined for identifying post-nominal modification constructions.

Definition of post-nominal modification in English is taken from Quirk *et al.* (1985) and for Persian Batteni (1999) was used. As Quirk *et al.* (1985) state there are three types of postmodification: finite clauses, non-finite clauses and prepositional phrases, which are classified below:

1. Finite clauses: There are two types of finite clauses as post-nominal modification elements: relative clauses and appositive clauses.

1-a) Relative clauses:

They are full clauses, one of whose items consists of a relative pronoun as head. This refers back to the head noun of the noun phrase in which it occurs as a postmodifier, e.g., 1.

1. The news that appeared in the papers this morning was well received.

1-b) Appositive clauses:

Superficially they are the same as the relative clauses but different in that:

• 'That' as a participle is not the element of the clause structure, but a conjunction.
• The non-restrictive appositive clause has the same introductory item as the restrictive (e.g., 2):

2. She rejected their excuses, even this last one, that investigations had taken several weeks (non-restrictive)

• The head of the N.P should be a general abstract noun such as fact, idea, reply, remark (e.g., 3):

3. The fact that he wrote a letter to her suggests that he knew her.

2. Non-finite relative clauses: We can postmodify the noun phrase with all three of the non-finite clause types: -ing participle, -ed participle and infinitive verb phrases (e.g., 4-6):

4. The person writing reports is my colleague.
5. A report written by my colleague appeared last week.
6. The place for you to stay is the university guest house.

3-Prepositional phrases: The most frequently used kind of post-modifier in a noun phrase is a prepositional phrase. Prepositional phrases are the reduced form of post-modification applied with different degrees of explicitness. Example 7 is the most explicit while example 9 is the least one:

7. The cow which is standing in the meadow attacked the girl.
8. The cow standing in the meadow attacked the girl.
9. The cow in the meadow attacked the girl.

Minor types of Postmodification include postmodification by adverb phrase and postposed adjectives:

3.a Postmodification by adverb phrase: Here are some typical examples of postmodification by adverb phrases, e.g., 9-11:

9. The road back is dense with traffic.
10. A man the size of a giant came up to me.
11. Somebody her age shouldn't do such strenuous exercises.

3.b. Postposed adjectives: There are three types of postposed adjectives (examples 12-14):

3.b.1) The head of the NP: (e.g., 12):

12. I want to try something different.

3.b.2) The modification or the complementation of the adjective: (e.g., 13):

13. A play popular in the 1890s.

3.b.3) The particular noun-adjective combination: (e.g., 14):

14. The heir apparent (as apposed to the apparent reason, the rich heir).

Types 3.b.1 and 3.b.2 are the central constructions whereas c is restricted to idiomatic phrases.

Multiple postmodification: Following the conditions a,b and c, we may have multiple postmodification:

- More than one modification can be applied to a single head (e.g., 15):

15. The man in the corner talking to John

- A postmodification element can be applied to more than one head (e.g., 16):

16. The man and woman in the corner

- It is possible to combine a and b and the result would be e.g., 17:

17. The man and the woman in the corner talking to John

Concerning statistical procedures, this study is to examine the distribution of the observed post-nominal modifying elements. PM elements identified in the size of two thousand words used in the introductory paragraphs of the articles are investigated. The number of the major types of postmodification construction following nouns is searched including: relative clauses, appositive clauses, prepositional phrases, -ing participles, -ed participles, infinitive phrases, minor types of postmodification and multiple postmodifications. As we deal with the frequency of the use of such constructions in more than one statistical population, native English-speaking writers, Iranian non-native and other non-native English-speaking writers, the statistical procedures applied to evaluate the significance of the differences is χ^2-test.

Data analysis: The first phase of analysis dealing with the frequency of use of post-nominal modifying elements examines the data to discover whether there is a significant difference between each contrasted pair written by native and non-natives in terms of the frequency distribution of eleven observed post-nominal modifying elements that were identified in the examination of data. Subsequently, two χ^2-tests were applied to examine the significance of the differences. The second phase of analysis involved a qualitative analysis with the goal of examining the data to discover the findings which could guide us in our search for theoretically significant differences useful for EFL instruction.

Analyzing the data in order to reveal the frequency of use of post-nominal modifying elements lead us to eleven post-nominal modifying constructions as follows:

1. Finite clauses

1.1. Relative clauses with the relative pronoun which, e.g., 18:

18. Policies which deal with clean air and water

1.2. Relative clauses with the relative pronoun who, e.g., 19:

19. Persons who exhibit self, agency, consciousness and personal identity

1.3. Relative clauses with the relative pronoun that, e.g., 20:

20. The factors that might moderate children's performance

1.4. Relative clauses with the adverbial pronouns when, where, e.g., 21, 22:

21. Yet this developmental stage, where aspects of identity and worldview are in flux,
22. A time of life ... when little about the future has been decided for certain, ...

1.5. Relative clauses preceding prepositions, e.g., 23,24:

23. The way in which the Children's Television Act of 1990 and a subsequent processing guideline have affected the amount and ...
24. A dynamic period in which a range of life directions and roles may be explored

1.6. Relative clauses with zero relative pronouns, e.g., 25,26:

25. The industries they penetrate
26. The theoretical framework we employed

1.7. Appositive clauses, e.g., 27,28:

27. The idea that anxiety, far from being a disease state, is a central component of general motivation control

28. By testing the hypothesis that a tendency to worry will benefit job performance in a sample of white collar financial workers

2. Non-Finite clauses:

2.1. Infinitive clauses, e.g., 29:

29. The ability to interpret the meaning of a sentence

2.2. Present Participle Clauses, e.g., 30:

30. Injuries resulting from a physical fight are much worse than psychological injuries.

2.3. Past Participle phrases, e.g., 31, 32:

31. Questions related to strategic performance with young children
32. The clinical scales used in the measure

3. Prepositional Phrases, e.g., 33:

33. Higher intelligence in extraverts

4. Minor types of postmodification, post-posed adjectives, e.g., 34, 35:

34. Minimal pulses adequate to evoke conscious sensation
35. The "child environment" model, similar to the transactional model

The frequency of use of each category in the three groups of articles is shown in Table 1.

In order to see whether all the post-nominal modifying constructions observed in ENS were also present in other two groups of ENNS and PNMIs or not, we tabulate the data and calculate the observed proportion of the distribution of each construction in the collected samples as Table 2 demonstrates.

As it is shown in Table 3 based on the date in Table 2, the most frequently used P.N.M construction in all of the three groups was prepositional phrase, the P.N.M.N group had used the construction more frequently than the other two groups.

It was also clear that relative clauses with adverbial pronouns was rarely used in the three groups as shown in Table 4.

It may be worth to know the decreasing order of the frequency of use of the P.N.M constructions among the three groups of writers which is orderd based on the

Table 1: Observed frequencies of the postnominal constructions in three groups of P.N.M.N, P.N.M.NN, P.N.M.I

Postnominal modifying constructions	P.N.M.N	P.N.M.NN	P.N.M.I
R.C. (which)	15	16	25
R.C. (who)	19	7	19
R.C. (that)	25	27	23
R.C. (adverbial pronouns)	2	1	4
R.C. (preceding preposition)	4	14	6
R.C. (Zero pronoun)	12	3	5
Appositive C.	11	16	4
Infinitive C.	17	24	10
Present participle C.	25	21	13
Past participle C.	44	37	33
Prepositional Phrase (P.P)	537	451	406
Post-Posed Adjective	6	4	5
Total	717	621	553

Table 2: The proportion of the observed frequencies of the postnominal constructions in three groups of P.N.M.N, P.N.M.NN and P.N.M.I

Postnominal modifying constructions	P.N.M.N (%)	P.N.M.NN (%)	P.N.M.I (%)
R.C. (which)	6.13	2.57	4.52
R.C. (who)	2.64	1.12	3.43
R.C. (that)	3.48	4.34	4.15
R.C. (adverbial pronouns)	0.27	0.16	0.72
R.C. (preceding preposition)	0.55	2.25	1.08
R.C. (Zero pronoun)	1.67	0.48	0.90
Appositive C.	1.53	2.57	0.72
Infinitive C.	2.37	3.86	1.80
Present participle C.	3.48	3.38	2.35
Past participle C.	6.13	5.95	5.96
Prepositional phrase (P.P)	47.89	72.62	73.41
Post-Posed Adjective	0.83	0.64	0.90

Table 3: The observed frequency and percentage of P.P

Groups	N	%
P.N.M.N	537	74.89
P.N.M.NN	451	72.62
P.N.M.I	406	73.41

Table 4: The observed frequency and percentage of relative clauses with adverbial pronouns

Groups	N	%
P.N.M.N	2	0.27
P.N.M.NN	1	0.16
P.N.M.I	4	0.72

information achieved in Table 1. Table 5 makes clear the decreasing order of the frequency of use of P.N.M constructions in the first group, P.N.M.N which has been analyzed in the second column of Table 1 headed by P.N.M.N.

The descending frequency order of P.N.M. in the second group, P.N.M.NN is shown in Table 6 based on the data in the third column of Table 1 headed by P.N.M.NN.

Table 7 makes clear the descending frequency order of the of use of P.N.M. elements in the third group, P.N.M.I based on the fourth column of Table 1 headed by P.N.M.I.

To investigate whether there is a significant difference between the frequency distribution of the

Table 5: The decreasing order of the frequency of use of P.N.M constructions in the first group, P.N.M.N

P.N.M constructions	N
P.P	537
Past participle C.	44
R.C (that)	25
Present participle C.	25
R.C. (who)	19
Inf. C.	17
R.C. (which)	15
R.C. (Zero pro)	12
Appositive C.	11
Post-Posed Adj	6
R.C. (Preceding prep)	4
R.C (adverbial pro)	2

Table 6: The descending frequency order of P.N.M. in the second group, P.N.M.NN

P.N.M Constructions	N
P.P	451
Past participle C.	37
R.C (that)	27
Inf.C.	24
Present participle C.	21
Appositive C.	16
R.C. (which)	16
R.C. (preceding prep)	14
R.C. (who)	7
Post-Posed Adj	4
R.C. (Zero pro)	3
R.C (adverbial pro)	1

Table 7: The descending frequency order of the of use of P.N.M. elements in the third group, P.N.M.I

A.N.W	N
P.P	406
Past participle C.	33
R.C.(which)	25
R.C (that)	23
R.C (who)	19
Present participle C.	13
Inf. C.	10
R.C (preceding prep.)	6
R.C (Zero pro.)	5
Post-Posed Adj	5
Appositive C.	4
R.C (adverbial pro)	4

P.N.M produced by native English writers as opposed to non-natives, the native P.N.M frequencies were compared with the observed distribution of the other two groups; the post-nominal modification constructions in the inter-language production were compared in two sets of pairs:

- Postnominal modification produced by native writers (P.N.M.N) and postnominal modification produced by the Iranian writers (P.N.M.I)
- Postnominal modification produced by the native writers of English (P.N.M.N) and postnominal modification produced by non-natives. Table 8 and 9, applying a chi-square test, show the expected frequencies, "E", calculated for two sets of A and B

Table 8: The observed and expected frequencies of the P.N.M constructions in the first pair, A

P.N.M.N		P.N.M.I	
O	E	O	E
44	43.737	33	33.733
15	22.227	25	17.143
19	21.510	19	16.590
25	28.680	23	22.120
2	3.585	4	2.765
4	5.736	6	4.424
12	9.321	5	7.189
25	21.510	13	16.590
17	15.057	10	11.613
6	6.453	5	4.977
11	8.604	4	6.636
537	532.014	406	410.326

Table 9: The observed and expected frequencies of the P.N.M constructions in the second pair, B

P.N.M.N		P.N.M.I	
O	E	O	E
44	43.737	37	37.881
15	22.227	16	14.283
19	21.510	7	11.799
28	28.680	27	24.219
2	3.585	1	1.242
4	5.736	14	8.073
12	9.321	3	6.831
25	21.510	21	21.114
17	15.057	24	19.250
6	6.453	4	4.347
11	8.604	16	12.420
537	532.014	451	459.540

Since the expected frequency of the relative clauses with adverbial pronouns for P.N.M.NN shown in Table 1 was <2, it was omitted to keep the test reliable. In the next stage, two χ^2-tests were applied to each pair, A and B and the values were added.

The χ^2 value was calculated for the second pair, B, as follows:

$$x_N^2 = \sum_{i-1}^{11} \frac{(o-E)^2}{E} = 21.2107$$

$$x_{NN}^2 = \sum_{i-1}^{11} \frac{(P-E)^2}{E} = 19.1818$$

Since the total value χ^2 was more than the critical value of χ^2 with 10 df, we conclude that a significant difference between two groups of P.N.M.N and P.N.M.NN exists.

$$x_{1-\alpha}^{2(k-1)} = x_{0.95}^{2(10)} = 18.3 \Rightarrow x_N^2 + x_{NN}^2 = 40.3925 > 18.3$$

The χ^2 value was calculated for the first pair, a, as follows:

$$x^2_{2N} = \sum_{i-1}^{11} \frac{(O-E)^2}{E} = 6.6717$$

$$x_{Ir} = \sum_{i-1}^{11} \frac{(O-E)^2}{E} = 7.8717$$

Since the total value of χ^2 was less than the critical value of χ^2 with 11 df, there was no significant difference between the frequency distribution of the postnominal modification constructions in two groups of P.N.M.N and P.N.M.I.

$$x^{2(k-1)}_{1-\alpha} = x^{2(11)}_{0.95} = 19.7 \Rightarrow x^2_N + x^2_{Ir} = 14.5434 < 19.7$$

RESULTS AND DISCUSSION

The data analyzed served to answer the two questions posed in the introduction of this study: what are the post-nominal modification elements commonly used in the academic articles written by native and non-native writers of English, Iranian and non-Iranian? and are there any differences between the two groups regarding the use of post-nominal modification? The statistical results of data analysis demonstrated that: There is a significant difference between the frequency distribution of the P.N.M constructions used in P.N.M.N and P.N.M.NN and There is no significant difference between the frequency distribution of the P.N.M constructions used in P.N.M.N and P.N.M.I.

In order to justify the results, we introduce the research context and the conditions under which the study was conducted: the writer, the text and the conditions of data collection, each of which might affect the pattern of use of P.N.M constructions.

The writer: The educational setting from which the articles were selected was a significant feature of the study. In P.N.M.N, 71% of the authors were academic writers in American universities with 20% of which coauthored and the rest 29% were from the universities of the U.K, Canada and Australia. In P.N.M.N.N, the writers of the articles were from Spain, Germany, Switzerland, Israel, Italy, Finland, Canada, USA, Turkey, India, Moscow, Japan, Netherland, Pakistan, Taiwan, Denmark and Belgium, with 30% of which having coathors. In P.N.M.I, 70% of the articles were written by the of Tehran University Ph.D candidates and professors coauthoring.

The text: The selected sub-genre of data analyzed included the introduction section of each academic article, which was viewed to be an inevitable part of all. A close subjective examination revealed to us that P.N.M.N texts were well-organized and the writing conventions were efficiently applied. In P.N.M.NN, 16% of the articles did not contain an introduction section as a separate part from the body. Among the non-native written articles, some appeared more native-like than others given text organization and complexity of sentence structures. In our examination of P.N.M.I compared with the other two groups, there were two noticeable differences: Firstly, most of the texts seemed to be composed of inter-language textual constructions displaying similarities with Persian as well as English. Therefore, the task of comparing non-native Iranian written constructions with those produced by native speakers of English seemed not to be difficult. Some of the examples observed are provided below for illustration:

36. "Metaphors because of implicational meaning that have" estearat be dadile mana-ye zemni ke darand metaphors with reason-of meaning-of implicational that have-3rd plu.

In this example, that is used as a converted form of "ke (Persian relative pronoun)" in Farsi. Thus, the erroneous postnominal modifying "that have" was used instead of the relative that clause, "that they have". A clear case of transfer effect from Persian.

37. The answer to aforesaid question returns to ignorance of man, which is the source of all human troubles are attributed to it; an ignorance for self is intuitive.

Pasokh be soal-e matrah shode be jahl-e ensan bar-mi-gardad, ke rishe-ye hameye
Moshkelat-e ensan ast be an nesbat dade mishavad; jahli ke be khodie khod zati ast.
Answer to question-of mention become with ingnorance-of human back-mi (present marker) turn-3rd sing, that source-of all troubles-of human is (3rd sing) to that attribute (noun) given mi (present marker) become (3rd sing).

In example 37, there is an erroneous use of P.N.M, which is the source of all human troubles are attributed to it. Instead of the correct construction: which is the source of all human troubles.

38. For instance, American compared to Chinese.

Be onvan-e mesal, amrikayee ha dar moghayese ba chiniha
With kind-of example, American s in comparison with china-s.

In the example 38, a phrase was misused as a sentence which is the result of the transfer effect of Farsi.

39. There are homeostatic mechanisms maintained by feedback, tending to stability and that there is a system of rules, implicit or explicit, governing the system.

Mikanismhaye homostatikiye vojud dard ke ba baazkhurd hefz mishavand, tamayol be sobaat darand, va in ke systemi az ghavanin hast, talvihi ya sraih, ke system ra hedayat mikonand.

Mechanism-s homeostatic-indefinite marker exist have that with feedback maintain mi(present-marker)-become-3rd plu, tend to stability have-3rd plu and this that system-indefinite marker of rules is, implicit or explicit, that system ra(object-marker) govern mi(present-marker)-do-3rd sing.

40. In order to answer to this important question.

Baraye pasokh dadan be in porseshe mohem

For answer give-gerund-marker to this question-of important.

In this example, the preposition "to" is misused as a converted form of "beh" in Farsi; this and many other erroneous instances in Farsi could efficiently be explained in terms of transfer.

41. All participants were Iranian Muslims, educated, living in Tehran over the last five years.

Hameye sherkat- konandegan mosalmanhay-e Iran-i, tahsil karde, saken-e tehran budand.

All-of participate-doers muslim-s-of Iran-from, educate done, resident(living-doer)-of tehran being-3rd plu.

Living in Tehran as a relative clause is the second modifying element for the noun phrase "Iranian Muslims". To join the previous P.N.M, it is necessary to add "and".

Another difference between the texts written by Iranian writers of English and the texts written by native speakers of English was the position of postnominal modifying elements; while immediate modification was the frequent feature of P.N.M in P.N.M.N, punctuated (interrupted) modifications were frequently used in P.N.M.I:

42. "Further this change has an impact on the relations among the parents, which has now turned from dependence pattern towards reciprocation.

Be alave in taghir tasire bar ravabete miane valedein dard, ke aknun az yek olguye vabaste be amale motaghabel taghir peida karde ast.

With addition this change effect on relations-of meaning parents have-3rd sing, that now from one pattern-of dependence to work-of reciprocation change find done is.

The relative clause "which has now turned from dependence pattern towards reciprocation", is immediately preceded by the noun "parents",whereas it modifies the noun "change".

43. Stress at various stages of the Iranian family life cycle, as an important factor in predicting family adjustment on the life cycle.

Stress dar marahele mokhtalefe charkheye zendegie khanevadegie Iranian, be onvan-e yek factor-e mohem dar pishbini-e sazgari-e khanevad-e dar charkhey-e zendegi

Stress in stages-of different-of cycle-of life-of family-of Iranian, with kind-of one factor-of important in predicting-of adjustment-of family-of in cycle-of life.

Stress has been modified by the prepositional phrase "be onvane yek factore mohem dar pishbinie sazegarie khanevade dar charkheye zendegi" which is not posed immediately after it.

We also observed some flawed sentences which seemed to be the result of the unnatural or ungrammatical use of P.N.M which were omitted:

44. Play is also important way that children express themselves.

Bazi hamchenin rahe mohemmi ast keh ba an (that) bache-ha khodeshan ra bayan mikonand.

Play also way-of important is that with that children themselves ra(object marker) express mi(present-marker)-do-3rd plu.

In this example, the relative pronoun "that" has been inadequately used instead of "in which".

45. Societies where the previous researches have been done javame-yi keh dar anha tahghighate ghabli anjam shodeh-and

Societies-yi(indefinite marker) that in them researches-of previous do become-3rd plu.

In 45, the relative pronoun, in which, which is an appropriate one is not found in Persian which uses that in them, instead of where or in which.

The data collection conditions: As this study analyzes the post-nominal modification in academic articles written by professionals in the field of psychology in three groups of native, non-native and Iranian speakers of English, the most appropriate way to collect comparable data was searching the articles through the Internet, which is a reflection of professional academic writing.

In addition to the factors, the text genre, the writer's specifications and data source, there are some other factors such as the authors' preference to use P.N.M, writing proficiency, age, sex and possibly the text type utilized as a requirement of the topic could potentially constrain the results of such a comparison.

One of the most important factors affecting the academic writing outcome leading to significant differences in applying P.N.M can be the first language (L1) interference of the writers. As one group of the articles was randomly selected from different L1 backgrounds, the overall differences discovered could be the result of some combined effect resulting from not only L1, but also the general effect of proficiency including degree of exposure to English as well as the writers' expertise in organizing complex thought into complex sentences.

Concerning the P.N.M.I, the findings revealed that there was no significant difference in the frequency distribution of the P.N.M constructions between the P.N.M.N and the P.N.M.I. The unexpected result of the analysis may be interpreted in two different directions:

According to Batteni (1999) post-nominal modification constructions in Persian are divided into five elements. The positions occupied by these elements are based on their closeness to head. These positions are hierarchically occupied by:

1. Nouns (for example: heiat modireye nalayeghe in sherkat) (directorate(heiat modire)-of inept-of this company)
2. Adjectives (not in linguistic but semantic sense, for example the noun "daneshmand" may function as an adjective in "pedare daneshmandash") (daneshmand: scholar, pedare daneshmand: father-of scholar))
3. Three subcategories can be placed in this position: nouns, pronouns and a bound morpheme, /i/. The example for the subcategory of noun is: "tarikh-e mashruiat-e mofassal-e Iran". (history-of Mashruiate-of comprehensive-of Iran). For pronouns, the example is: "ketab-e ghatur-am" (book-of thick-my). Semantically, these two subcategories have the meaning of possession. The subcategory of /i/ adds the meanings of indefinity to the noun phrase such as "pesar-e ghad-oland-i". (boy-of tall-indefinte marker)

4. "ra" as an object indicator (for example" baradar-e kuchak-e ou ra did-am") (brother-of small-of he object-marker see-1sing past)
5. Adverbial groups, sentence phrases and clauses (for example "noktey-e taze-yi ke be an eshare gardid besiar jaleb ast") (point-of new-indefinite marker that to that mention become-3rd sing past marker very interesting is)

There is a similarity in the position of the fifth element as P.N.M between English and Persian, whereas the other elements mostly take the position of premodification in English, such as adjectives and nouns in the position of adjectives. The examples 46-49 could clarify the differences and similarities of the P.N.M in the two languages:

46. Reis-e jomhur-e faghid-e Amrika ke chandi pish be ghatl resid, Head P.N.M1 P.N.M2 P.N.M3 P.N.M4 P.N.M5 (Reis-e jomhur: president, faghid: dead, ke chandi pish be ghat resid: who was murderd some time ago)
47. The dead president of the U.S who was murdered some time ago, premodification Head P.N.M1 P.N.M2
48. Reis jomhur-e faghid-e Amrika - ke chandi pish be ghatl resid, Head N Adj N Relative Clause.
49. The dead president of the U.S who was murdered some time ago, A Head P.P Relative clause

The P.N.M 1 and the P.N.M 2 in sentence (47) have the same position in comparison with the P.N.M 3 and the P.N.M 5 in sentence (46), whereas the P.N.M2 in sentence (1) equals the premodification construction in sentence (47). Therefore, here there is a clear distinction and an explicit rule for the use of adjectives as a postmodifying element in Persian and the use of adjectives as a premodifying construction in English. Thus, concerning L1, P.N.M may not be be problematic for EFL learners, at least at the professional level and there may be no need to focus on the construction in ESP programs.

No statistically significant difference in frequency distribution of P.N.M constructions might also be due to the high EAP proficiency level of the Iranian EFL writers. Statistical analysis of the data in the study showed that there was a significant difference in frequency distribution of the P.N.M constructions between the P.N.M.N and P.N.M.NN groups. Consequently, it may be concluded that:

- As the articles were selected from the electronic journals on psychology on Science Direct database, the factor of edition may not be strongly applied to them. Without oe little edition, the language of the

articles was greatly close to the interlanguage and as a result, the pattern of use of the P.N.M in non-native articles is different from that of native articles

- Interference of the first language of the EFL writers might be another factor of developing difference. As far as the articles were randomly selected from different nations, it is almost impossible to investigate the L1 interference in P.N.M.NN group

CONCLUSION

Effective English communication in the world of science is possible only by means of a good academic writing skill in English which is viewed, in our time, as the international language of science. This study is intended to analyze the use of P.N.M as a linguistic device in introduction sections of academic articles in the field of psychology in the three groups of native, non-native and Iranian writers of English.

Statistical analysis revealed that although there was a significant difference in the frequency distribution of P.N.M between P.N.M.N and P.N.M.NN, there was no significant difference in the frequency distribution of P.N.M between P.N.M.N and P.N.M.I. To justify the results, we first elaborate on the variables of the study: the writers, texts and conditions of data collection. Similarly the L1 and the L2 writing proficiency of the authors related to their educational and cultural background might influence the use of P.N.M. in discourses they produce.

In the articles written by non-native writers, there was a few examples of problematical constructions and instances which revealed the effect of transfer from L1 to L2 regarding the application of P.N.M. The flawed constructions were categorized as follows:

- Ellipsis of relative pronoun that in relative clauses in contexts in which its use seemed obligatory
- Using a phrase and treating it as a complete sentence
- Multiple punctuated P.N.Ms that potentially caused ambiguity
- The inappropriate use of prepositions to and in due to the interfering effect of writers' L1 resulting in literal translation
- Wrong use of more before verbs as an adverb due to the L1 interference
- The inappropriate use of subject pronoun after the relative pronoun when it is the subject of the relative clause
- Misuse of where instead of in which

- The inappropriate use of adjectives instead of nouns
- Not using conjunctive words when necessary to join multiple P.N.Ms
- Absence of a preposition at the end of relative clauses, using that

The remarks mentioned were based on a small size randomly selected sample of academic data in psychology. Clearly a larger corpus, with a more controlled research context could render thorough results the theoretical insights of which would be more insightful.

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