Second Language Learners' Choice of English Sentence Structure: Active vs. Passive

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Abstract

Across four tasks, the sensitivity of advanced Persian Learners of English as a Foreign Language (PLEFL) to the impact of thematic hierarchy on the choice of English sentence structure was tested. In recognition tasks, participants were presented with pairs of active and passive sentences constructed with the use of theme-experiencer (such as *amuse*) and experiencer-theme (such as *praise*) verbs. In the production tasks, participants were presented with sets of two nouns and a verb (including both theme-experiencer and experiencer-theme verbs) and requested to construct a sentence for each set. The dependent variable in all tasks was the syntactic form of the sentence preferred or produced by the participants. The results demonstrated that with theme-experiencer verbs, passives are more frequent. This indicates that PLEFL place the more prominent thematic roles in the initial position of a sentence. The consequences of the findings of this study for perspectives on ultimate attainment are discussed.

Key words: thematic hierarchy, active vs. passive voice, experiencer-theme verbs, theme-experiencer verbs, thematic roles, animate vs. inanimate nouns, ultimate attainment.

1. Introduction

Speakers of a language have several syntactic options available to them in order to express a semantic content. In the following sentences, the propositional content is the same:

1.a. The doctor administered the shock.

1.b. The shock was administered by the doctor.

The question is how the speakers choose the syntactic structure for expressing the proposition they have in mind. Researchers seeking to understand the interplay between conceptual and linguistic representations would like to investigate how conceptual representations are mapped into linguistic representations.

The most widely used method to explain the mapping from semantic representation to syntax is thematic hierarchies (Givon, 1984; Grimshaw, 1990). Thematic hierarchy is a hypothesized ordering of thematic roles by prominence. Thematic roles are part of the interface between syntax and semantics because they link meanings to syntactic structures. An important point about these thematic roles is that there is a hierarchy among them. A well-known phenomenon is that Agent is associated with the subject position and Theme with the object position. This indirectly indicates that Agent is higher than Theme since the subject position is higher than the object position in the syntactic structure. Thus, as far as mapping between thematic roles and syntactic positions is concerned, the thematic hierarchy determines what the subject will be – the NP with the more prominent role in the thematic hierarchy is selected as the subject.

There are several versions of Thematic Hierarchy proposed by several linguists, including:

Jackendoff (1972):   <Agent, Location/Source/Goal, Theme>

Larson (1988):   \<Agent, Theme, Goal, Obliques\>

Baker (1989):   \<Agent,Theme,Goal/Benefactive/ Location\>

Bresnan & Kanerva (1989):   \<Agent,Benefactive,   Recipient/Experiencer, Instrument, Theme/Patient, Location\>

Grimshaw (1990):   \<Agent, Experiencer, Location/Source/Goal, Theme\>

Although there exists a diversity of proposals about the ordering of the roles, there is a general agreement that the agent and the experiencer roles should be the highest-ranking roles and the speakers tend to make the agent and the experiencer the subject of the sentence.

There have been several types of justification in the literature for these hierarchies. Some have justified it on pragmatic grounds. For example, functional linguists such as Givón (1984) have proposed that the hierarchy reflects the degree of topicality of arguments, with the highest role being the most topical one. The selection of subject becomes important because the subject is usually the primary topic of the sentence. It is logical, then, that the highest thematic role in the hierarchy occupies that position. The object is the secondary topic. Therefore, it should be assigned to the next highest role in the hierarchy.

Another basis for the justification of the hierarchy of thematic roles in English is the syntactic hierarchy to which the thematic roles are linked. For example, Agent is linked to the subject position, and Theme to the object position. The subject position is higher than the object position and thus we can say that Agent is higher than Theme. Experiencer, too, is higher than Theme since Experiencer is linked to subject and Theme to object.

Others have justified the hierarchy on semantic grounds. As an evidence, Grimshaw (1990) presents English compounds. For compounding, when a

verb takes more than one argument, the least prominent one must be inside the compound, the more prominent one outside. Consider the compound and the argument structure of the verb in the following example:

2. The students play roles.

2.a. role-playing by students

2.b. *student-playing role

The compound *role-playing* in 2.a is grammatical, but the compound *student-playing* in 2.b is not. As shown in 2, the external argument of the verb *play* is *students*, and the internal argument is *roles*. In 2.a the internal argument, the less prominent argument, is inside the compound, but in 2.b the external argument, the more prominent argument, is inside the compound. This means that the less prominent argument must be inside the compound when the verb takes more than one argument.

Moreover, Bock and Warren (1985) have shown that the earliest sentence position tends to be filled by nouns that are concrete and imageable. For example, *The doctor administered the shock is* preferred to *The shock was administered by the doctor*. When the participants were asked to recall sentences like the ones above, they produced significantly more inversions in the second type of sentences, placing the more imageable noun before the less imageable one. But their finding can be interpreted in terms of the thematic hierarchy as well. Actually, because *the doctor* is the agent, the highest-ranking role on the hierarchy list, there is a tendency to put it in the subject position.

As for the expression of the Experiencer argument, two main classes are distinguished in English (Jackendoff, 1990, and Levin, 1993), as is shown in the following examples:

3.a. The girl fears the snake. (Experiencer-subject verb)

3.b. The snake frightens the boy. (Experiencer-object verb)

In 3.a Experiencer of the verb *fear* appears as the subject *the girl*, and in 3.b experiencer of the verb *frighten* appears as the object *the boy*.

The thematic hierarchy is observed in the sentence with an Experiencer-subject verb in 3.a, i.e., Experiencer *the girl* appears as subject which is higher than Theme object *the snake*. This is not the case in 3.b. Theme-experiencer verbs assign the role of theme to the subject of an active sentence and experiencer to the object. In 3.b, Theme *the snake* appears as subject and Experiencer *the boy* as object, which is a violation of the order in Thematic Hierarchy.

In this study, verbs like those in 3.a, i.e., Experiencer-subject verbs, are called normal verbs and refer to verbs that do not violate the ordering in the thematic hierarchy.

2. Thematic hierarchy and passivization

An important change in passiviation in English is the change of argument structure. If prominence on the thematic hierarchy influences assignment of arguments to subject position, speakers should have some tendency to produce passives with theme-experiencer verbs. In other words, with theme experiencer verbs, a strong prediction would be that passives would actually be more common than actives.

Although in English actives occur more frequently than passives (Hopper and Thompson, 1980), the prominence on the thematic hierarchy causes speakers to produce passives with certain verbs. For instance, as far as theme-experiencer verbs are concerned, there is a tendency to produce passives rather than actives in order to put the items that are prominent in thematic hierarchy in subject position. The sentences at the beginning of this

article provide an example for this point. In the active sentence, Agent is in initial position and serves as the subject of the sentence; but in the passive sentence, Agent has moved to the final position, which violates the ordering in the thematic hierarchy.

As far as native speakers are concerned, Ferreira (1994), through 4 experiments, has provided evidence which indicates that "speakers attempt to place more prominent thematic roles (agent, experiencer) in the subject position of a sentence" (p.715).

The question addressed in this study is whether this hierarchy holds even for SLLs. Specifically speaking, the question is: Do the PLEFL at an advanced level of proficiency put the more prominent thematic roles in the subject position of a sentence? In other words, do the SLLs prefer to assign the subject to the more prominent thematic roles?

This study deals with written language. In order to examine the effect of thematic hierarchy on the sentence structure, active and passive variation was used across two tasks of recognition and production.

Experiment 1: Recognition Task

Method

Participants

The participants were 22 graduates from the University of Mashhad with an advanced level of proficiency. (All throughout this study, advanced students have been selected from a large pool through a TOEFL test and those whose scores were more that 2 standard deviations above the mean have been selected, mean = 73, standard deviation = 6.35).

Materials

Twenty verbs were selected half of which included normal verbs and the other half included theme-experiencer verbs. The two arguments selected for each verb differed in animacy, i.e., each sentence contained one animate and one inanimate entity. For each verb, a pair of active and passive sentences was constructed. In each pair, the same proposition was expressed but syntactic structures differed. Examples are provided below:

Normal verbs

4.a. The student ignored TV.

4.b. TV was ignored by the student.

Theme-Experiencer verbs

5.a. The news alarmed the police.

5.b. The police was alarmed by the news.

With the Normal verbs, the pair of sentences described an action where, in the active voice, the animate NP was the subject and the inanimate entity the object (4.a). Whereas with the Theme-experiencer verbs, the reverse relationship held, i.e., in the active voice, the inanimate NP was the subject and the animate entity the object (5.a). The prediction was that if thematic hierarchy is psychologically real, participants would prefer sentences in which either the agent or the experiencer was in subject position, even if this implied that they will have to select the passive sentences. The following table shows the different conditions:

Table 1. An overview of the sentences: Active and Passive sentences with Normal and Theme-experiencer verbs

	Word order with **Normal Verbs**	Word order with **Theme-experiencer verbs**
Active	A: experiencer-other thematic roles Animate-inanimate	B: Theme-experiencer Inanimate-animate
Passive	C: other thematic roles-experiencer Inanimate-animate	D: Experiencer-theme Animate-inanimate

It was predicted that the frequency of options for conditions A and D would be higher than that for conditions B and C.

Procedure

Participants were provided with a list of 20 pairs of sentences and asked to make acceptability judgements about them. The instructions emphasized that both sentences were grammatically correct but for the Native speakers one of the sentences in each pair was acceptable and required them to put a tick in front of the sentence they found more acceptable.

Data Analysis

Each sentence was coded based on its syntactic structure (active, passive), verb type (Normal and Theme-experiencer verbs), and the animacy status of its subject (animate, inanimate). Then, the frequency of each type of structure selected by the participants was counted and recorded. The dependent variable was the frequency of passive and active sentences (based on the verb type) selected as more acceptable by the participants.

Results

The frequency and percentage of the selected active and passive sentences with Normal and Theme-experiencer verbs are shown in Table 2 below. The most important point in the results was that passives were more frequent with theme-experiencer verbs than with normal verbs (29.09% Vs. 10.68% of all responses, respectively, Table 2). Results of chi square analysis showed that this difference is significant ($\chi^2_{(df=1)} = 37.491$, p <. 01).

Table 2. Frequency and percentage of the selected Active and Passive sentences with Normal and Theme-experiencer verbs

	Word order with **Normal Verbs**	Word order with **Theme-experiencer verbs**	Total
Active	experiencer-other thematic roles Animate-inanimate (174) 39.5%	Theme-experiencer Inanimate-animate (91) 20.68%	(265) 60.22%
Passive	Other thematic roles- Experiencer Inanimate-animate (47) 10.68%	Experiencer -theme Animate-inanimate (128) 29.09%	(175) 39.77%

This finding suggests that the participants prefer sentences in which experiencers occur in subject position and themes in object position, which is in accordance with the predictions of the thematic hierarchy. However, another reason participants in the study may have preferred passives with the theme-experiencer verbs is that the nouns differed in animacy and they may

have preferred sentences in which the animate noun comes before the inanimate one. Thus, another experiment was conducted to see whether the theme-experiencer verbs are used in passive voice due to the effect of thematic hierarchy or due to the animacy effect. The two nouns selected for each sentence in the next study were both animate. Examples are provided below:

Normal Verbs

    6.a. The student disliked the teacher.

    6.b. The teacher was disliked by the student.

Theme-experiencer verb

    7.a. The journalist enraged the dictator.

    7.b. The dictator was enraged by the journalist.

The complication with this case is that when both arguments of the verb are animate, the thematic structure of the theme-experiencer verb is ambiguous. For instance, in the sentence *The journalist enraged the dictator*, there are two readings. On the theme-experiencer reading, *the journalist* did not intentionally *enrage* the *dictator*. Rather, something about his character or presence was inherently *enraging*. But it is also possible that *the journalist* intentionally *enraged* the *dictator*. In this reading, *the journalist* is an agent, not a theme, and so the verb becomes and agent-experiencer not a theme-experiencer. Participants are expected to prefer passives when they take the theme-experiencer reading of the arguments, but actives when they take the agent-experiencer reading.

Experiment 2: Recognition Task

Method

Participants

The participants were 19 graduates with an advanced level of proficiency from the universities of Tehran and Azzahra.

Materials

Twenty eight verbs were selected half of which included normal verbs and the other half included theme-experiencer verbs. The two nouns selected for each sentence were animate.

In each pair of active and passive sentences, the same proposition was expressed but syntactic structures differed. The following table (Table 3) shows the different conditions:

Table 3. An overview of the sentences: Active and Passive sentences with Normal and Theme-experiencer verbs

	Word order with **Normal Verbs**	Word order with **Theme-experiencer verbs**
Active	Experiencer-other thematic roles Animate-animate	Theme-experiencer Animate-animate
Passive	other thematic roles-experiencer Animate-animate	Experiencer-theme Animate-animate

The prediction, based on the thematic hierarchy, is that participants would prefer the passive voice for sentences with a theme-experiencer verb.

Procedure

Participants were provided with a list of 28 pairs of sentences and asked to make acceptability judgements about them. The instructions emphasized that both sentences were grammatically correct but for the Native speakers one of the sentences in each pair was acceptable and asked them to put a tick in front of the sentence they found more acceptable.

Data Analysis

Each sentence was coded based on its syntactic structure and verb type. Thus, the frequency of each type of structure selected by the participants was counted and recorded. The dependent variable was the frequency of passive and active sentences for each type of verb selected as more acceptable by the participants.

Results

The frequency and percentage of the selected active and passive sentences with Normal and Theme-experiencer verbs are shown below in Table 4. As was found in the previous experiment, passives were selected more frequently with theme-experiencer verbs than with normal verbs (27.63% Vs. 17.29% of all responses, respectively, Table 4). Results of chi square analysis showed that this difference is significant ($\chi^2_{(df=1)} = 12.657$, p $< .01$).

Table 4. Frequency and percentage of the selected Active and Passive sentences with Normal and Theme-experiencer verbs

	Normal Verbs	Theme-experiencer verbs	Total
Active	experiencer-other thematic roles (184) 34.58%	Theme-experiencer (109) 20.48%	(293) 55.07%
Passive	other thematic roles-experiencer (92) 17.29%	Experiencer-theme (147) 27.63%	(239) 44.92%

Data gathered in these two experiments come from recognition tasks. In the next two experiments, data come from production tasks.

Experiment 3: Production Task

Method

Participants

The participants were 19 graduates from the University of Tehran at the intermediate level of proficiency plus 11 more ones at the advanced proficiency level. But since the majority of the participants at the intermediate level produced no passive sentences, they were excluded. In this way, only 11 participants' scores were entered for analysis.

Materials

Twenty four verbs were selected half of which included normal verbs and the other half included theme-experiencer verbs. The two arguments selected

for each verb differed in animacy, i.e., each sentence contained one animate and one inanimate entity. Twenty four word triples were constructed for the experiment. Each triple consisted of two nouns and a past tense verb ordered as Noun Noun Verb. The two nouns differed in animacy.

Sample stimuli are shown in Table 5.

Table 5. Sample stimuli used in Experiment 3

Noun	Noun	Verb	Your sentence
Hairdo	Mother	Compliment	
Toy	Boy	Amuse	
Film	Reviewer	Criticize	
Delay	Customer	Annoy	

Procedure

The word triples were presented to the participants. The instructions required them to make sentences using the words given; they were also asked not to add any word to the sentence except for prepositions and function words. The prediction was that with theme-experiencer verbs more passives would be constructed so that the experiencer would come in initial position.

Data Analysis

Each sentence produced by participants was coded based on its syntactic structure (active, passive), verb type (Normal and Theme-experiencer verbs), and the animacy status of its subject (animate-inanimate or inanimate-animate). Since the majority of the participants at the intermediate level did not produce any passive sentence, they were excluded from the analysis. In

this way 19 participants were excluded. Then, the frequency of each type of structure produced by the advanced level participants was counted and recorded. The dependent variable was the frequency of passive and active sentences (based on the verb type) produced by the participants.

Results

The frequency and percentage of the active and passive sentences produced with Normal and Theme-experiencer verbs are shown below in Table 6. The most important result as can be seen in Table 6 was that passives were more frequent with theme-experiencer verbs than with normal verbs (25.75% vs. 4.54%, respectively). Results of chi square analysis showed that this difference is significant ($\chi^2_{(df=1)} = 39.200$, $p < .01$).

Table 6. Frequency and percentage of the Active and Passive sentences produced with Normal and Theme-experiencer verbs

	Word order with **Normal Verbs**	Word order with **Theme-experiencer verbs**	Total
Active	experiencer-other thematic roles Animate-inanimate (120) 45.45%	Theme-experiencer Inanimate-animate (64) 24.24%	(184) 69.69%
Passive	other thematic roles-experiencer Inanimate-animate (12) 4.54%	Experiencer –theme Animate-inanimate (68) 25.75%	(80) 30.29%

Once again the reason why subjects have produced more passives with the theme-experiencer can be attributed to the fact that the nouns differed n animacy. In other words, subjects may have attempted to produce sentences with the animate noun coming before the inanimate one. So, the next experiment was conducted to check for this effect.

Experiment 4: Production Task

Method

Participants

The participants included 20 students from the University of Mashhad with an advanced level of proficiency.

Materials

Twenty four verbs were selected half of which included normal verbs and the other half included theme-experiencer verbs. The two nouns selected for each sentence were both animate. Twenty four word triples were constructed for the experiment. Each triple consisted of two nouns and a past tense verb ordered as Noun Noun Verb. Sample stimuli are provided in Table 7.

Table 7. Sample stimuli used in Experiment 4

Noun	Noun	Verb	Your sentence
Mother	Father	Excused	
Baby	Sitter	Amused	
Student	Teacher	Misunderstood	
Swimmer	Safeguard	Drowned	

Procedure

The procedure was the same as that for Experiment 3.

Data Analysis

The same procedure as in Experiment 3 was used for analyzing the data in this experiment, too.

Results

Table 8 below demonstrates the frequency and percentage of the active and passive sentences produced with Normal and Theme-experiencer verbs. The most important finding in the results was that passives were more frequent with theme-experiencer verbs rather than with normal verbs (Table 8). Results of chi square analysis showed that this difference is significant $(\chi^2_{(df=1)} = 70.323, p < .01)$.

Table 8. Frequency and percentage of the Active and Passive sentences produced with Normal and Theme-experiencer verbs

	Word order with Normal Verbs	Word order with Theme-experiencer verbs	Total
Active	experiencer-other thematic roles Animate-animate (197) 41.04%	Theme-experiencer Animate-animate (85) 17.70%	(282) 79.57%
Passive	other thematic roles-experiencer Animate-animate (40) 8.33%	Experiencer -theme Animate-animate (158) 32.91%	(198) 20.41%

3. Discussion

The purpose of this study was to examine whether the thematic structure of verbs would affect SLLs' decision to choose from among different syntactic structures expressing the same proposition. Specifically speaking, if thematic hierarchy has psychological reality, then sentences should be structured so that the highest thematic role occurs in subject position. Therefore, with theme-experiencer verbs participants should have some tendency to prefer passive sentences because the passive places the role higher on the thematic hierarchy (experiencer, rather than theme) in subject position. The results of the experiments support these predictions. These results indicate that SLLs' choices from among syntactic options are influenced by thematic structure. With normal verbs, passives occurred on less than 17.29% of trials in the experiments; with theme-experiencer verbs, passives occurred on more than 27.63% of trials across experiments. Passives occurred more often with theme-experiencer verbs than with normal verbs even when both arguments of the verb were animate. Thus, it appears that, SLLs, quite like the native speakers, prefer sentences that are organized so that more thematically prominent entities occur in more syntactically prominent positions.

4. Implications

One of the main issues in SLA is whether L2 learners will ever end up with a competence like that of the native speakers. The final state L2 grammar might become identical to that of the native speaker or different from it in different ways. As Sorace (1993) points out, at the end state SLLs may develop a grammar of the L2 that lacks some property of the target grammar; this grammar is said to be incomplete (pp. 23-24). Or the SLLs

may develop an L2 grammar that is divergent, whereby some property is instantiated but in a manner that is not consistent with that property in the target grammar. For instance, if in a language two forms are possible for expressing the same proposition, but for the native speaker one form is more natural than the other one, in certain cases, and the SLLs use them interchangeably, making no distinction between the two forms, their grammar is said to be divergent form that of the native speaker.

Of course, most of the research on ultimate attainment has been conducted in the framework of Universal Grammar and the accessibility of principles and parameters. Based on the Full Transfer/No Access theory (e.g. Bley-Vroman, 1989; Schachter 1990), the end state grammar is incomplete and divergent. Nativelikeness, if observed at all, is rare, and would not be attained via direct access to UG and associated domain-specific learning principles but by extraction of universal properties of grammar from the L1 and use of generalized learning principles. Based on the No Transfer/Full Access theory (e.g., Epstein, Flynn & Martohardjono, 1996; Martohardjono & Flynn, 1995), the SLLs' grammar at the end state becomes nativelike, at least with respect to the core grammar, and there is no evidence of incompleteness or divergence. Based on an intermediate position, there is a full L1 transfer and complete access to UG (e.g. Schwartz, 1998; Schwartz & Sprouse, 1996).

Birdsong (1999), too, refers to the variety of ongoing research efforts relating to ultimate attainment in second language acquisition and concludes that:

Ultimate attainment data are invaluable for ongoing mainstream research in L2A theory, in that they afford unique perspectives on the limits of L2A. On the received view of late L2A, the upper limits of competence are not

comparable to those of a native monolingual. "Success," construed as attainment of nativelikeness, is ruled out in principle by advocates of the Critical Period Hypothesis (e.g., Johnson & Newport, 1989; Long, 1990) and by those who argue that Universal Grammar and associated learning mechanisms are not available to post-adolescent L2 acquirers (e.g., Bley-Vroman, 1989). Under these views, the typical, if not unique, outcome of L2A is "failure" or non-nativelike competence. However, recent research has challenged the notion of universal or near-universal failure. It appears that nativelikeness may not be so rare as to be "peripheral to the enterprise of second language acquisition theory" (Bley-Vroman, 1989; Selinker, 1972: 19)

This study provides a picture of advanced level learners' interlanguage with specific reference to their knowledge of the lexico-syntacitc interface. The results showed that SLLs, like the native speakers, show a principled preference for sentences that are organized so that more thematically prominent entities occur in more syntactically prominent positions. Thus, there is an approximation towards nativelike competence.

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