

THE ROLE OF SALIENCE IN THE SECOND LANGUAGE ACQUISITION OF FOCUS STRUCTURE*

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The study presented in this paper is designed to answer the question: Which is a more salient cue for English speakers to Focus structure in Hungarian-prime: position or prosody? The second language acquisition literature shows that learners exploit Information structure, including Focus, to linearize their sentences from the early stages of acquisition. This study investigates the acquisition of Focus structure in Hungarian-prime, a simplified version of Hungarian, by first exposure learners. Klein and Perdue (1993, 1997) argue learners of various European L2s follow the principle *Controller First, Focus Last*. If these linearizations follow from universal properties of language, then they are not acquired. On the other hand, if these linearizations reflect distributional properties of the L2, then they result from an analysis of the input, meaning that sensitivity to word order or prosodic marking could play an essential role in the acquisition of Focus structure.

The outline of the paper is as follows: section 1 is devoted to an exploration of Information structure, centering around properties of English, Hungarian, and Hungarian-prime. Section 2 offers overviews of the acquisition problem and perceptual salience. The methodology of the study is presented in section 3, followed by a discussion of the results in section 4. Finally, the contents of the paper will be summed up in the conclusion section.¹

1. Information structure

Information structure (IS) is a universal property of language (Erteschik-Shir 1997, 2007; Kiss 1995; Prince 1981). Lambrecht (1994) suggests that analyses of IS are concerned with the relationship between linguistic objects and the cognitive states of interlocutors. However, IS phenomena are only relevant to linguists if they are reflected in grammatical structure, e.g. phonology or syntax (Lambrecht 1994). Furthermore, the linear order of constituents is often determined by what is contextually known or not known to the speaker (Erteschik-Shir 2007). The question then becomes how to define contextual knowledge.

IS reflects the organization of discourse functions such as Topic, Focus, and Comment. Topics must be somehow inferable from a preceding context. Consider the following example:²

* Thank you to Laszlo Szabo of the Hungarian Canadian Cultural Association of Calgary for the audio recordings and to Kim Giese for the illustrations. Also, thank you to those who attended the Special Workshop on Language Acquisition at the 2016 meeting of the Canadian Linguistic Association; your questions and feedback were greatly appreciated.

¹ This paper summarizes a portion of the findings of my Master's Thesis, which I completed in 2011.

² The simplest illustration of IS is through question and answer pairs (Jackendoff 2002).

- (1) Q: What did John do?
 A: [He]_{TOPIC} washed the dishes (adapted from Erteschik-Shir 2007: 1)

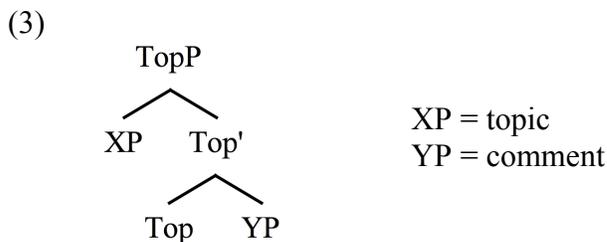
In (1), the Topic *he* refers to the same individual denoted by the proper name *John*. Topics are often thought of as old information in a discourse, however, Erteschik-Shir (2007) suggests that Topics are "given" in the sense that speakers and hearers have the referent in mind. This claim is in concordance with Lambrecht's claim above that IS is concerned with the relationship between linguistic objects and cognitive states of speakers and hearers.

The Focus of a sentence is the information that the speaker wants the hearer to attend to (Erteschik-Shir 1973, 1986, 1997). Additionally, Foci must be new in the discourse (Erteschik-Shir 2007). In other words, Focus can be defined as the non-presupposed information in a discourse. Consider example (2).

- (2) Q: What did John do?
 A: He [WASHED THE DISHES]_{FOCUS}³ (adapted from Erteschik-Shir 2007: 28)

In (2), the information contained in the constituent *WASHED THE DISHES* is not available from the preceding context question.

Distinguishing the Topic from the Comment is a widely accepted practice, thus, discussion of the Comment is pertinent. Rizzi (1997) proposes the following structural mapping of the Topic-Comment division:



Rizzi posits a Topic phrase which is headed by Top; all constituents expressed as the discourse function Topic move out of the Comment (i.e. YP) to Spec-TopP. This structural relationship is designed to capture the fact that all languages have IS. Crucially, however, some languages tend to grammaticize IS. Although exploring the theoretical underpinnings is beyond the scope of this paper, I will note that it is a matter of debate whether embedding the Topic-Comment organization solely in phrase structure is the most appropriate way to capture this distinction, or if IS is better analyzed in terms of mappings between phrase structure and distinct functional representations and/or semantic structures. Nonetheless, the structure in (3) allows for a straightforward discussion of the interaction between Topic, Focus, and Comment.

Following (3), we can see that the Focus is contained within the Comment. Consider the following examples (adapted from Erteschik-Shir 2007: 28):

³ Focus is represented in all capital letters to illustrate the fact that the Focus of the sentence receives main sentence stress (Varga 1980) in the languages under investigation (English and Hungarian/Hungarian-prime).

(4) Q: What did John do?
 A: [*He*]_{TOPIC} [*WASHED THE DISHES*]_{FOCUS, COMMENT}

(5) Q: What did John do?
 A: [*He*]_{TOPIC} [*washed [THE DISHES]*]_{FOCUS} COMMENT

In the answer portion of example (4), notice that the Focus and the Comment are the same constituent. Conversely, the focused constituent in (5) is a distinct unit contained within the larger Comment. The differences between (4) and (5) are one of many ways in which different discourse functions can interact. As we will see in the following section, the discourse functions in question are linguistically significant given that they can be marked intonationally or through word order.

1.1 Information structure and word order in Hungarian

It is not uncommon for those who work on Hungarian to suggest that it is a language with free word order (Kiss 2002). What is meant by this claim is that there are no fixed structural positions for subjects and objects in Hungarian. Consequently, a verb and its subject and direct object can form sentences in any of the possible combinations that a three-item set can make (i.e. SVO, SOV, VSO, VOS, OVS, OSV). This illustrated in example (6).

- (6) a. János szereti Mari-t.⁴
 John loves Mary-ACC
 'It is John who loves Mary.' (SVO)
- b. János Marit szereti.
 'As for John and Mary, he loves her.' (SOV)
- c. Szereti János Marit.
 'John loves Mary.' (VSO)
- d. Szereti Marit János.
 'John loves Mary.' (VOS)
- e. Marit szereti János.
 'It is Mary who John loves.' (OVS)
- f. Marit János szereti.
 'As for Mary and John, he loves her.' (OSV) (Kiss 1981: 187)

⁴ The object *Mari* 'Mary' is overtly case-marked with *-t* '-ACC'; the subject *János* does not receive overt nominative case-marking. The hyphen is used to illustrate that *-t* '-ACC' is inflectional marking, but it does not in fact show up in Hungarian orthography.

However, the ordering of constituents is in fact not totally free. Kiss (2002) suggests that the function associated with a specific linear position is a logical function (i.e. IS; Topic or Focus) rather than a grammatical function (subject or object). Thus, drawing on IS is necessary to provide an accurate account of Hungarian word order variations.

Like other languages characterized by (3), the Hungarian sentence is made up of a Topic and a Comment (Varga 1980). In Hungarian, however, the assignment of the Topic function is independent of the assignment of the grammatical function *subject* (Kiss 2002). The difference in grammatical functions (i.e. subject vs. object) in Hungarian is captured through case-marking. In (7), both a subject (7a) and an object (7b) are realized as Topics.

- (7) a. [János]_{TOPIC} [fel hivta Mari-t]_{COMMENT}⁵
 John up-VM called Mary-ACC
 'John called up Mary.'
- b. [Mari-t]_{TOPIC} [fel hivta János]_{COMMENT}
 Mary-ACC up-VM called John
 'Mary was called up by John.' (adapted from Kiss 2002: 2)

If we consider example (7) from the perspective of the semantic roles assigned by the verb phrase *fel hivta* 'call up' or 'telephone', we can see that (7a) and (7b) are equivalent. In English, at least in terms of the AGENT semantic role, the subject and Topic functions tend to coincide in simple declarative sentences. This can be seen in the translation of (7a). Moreover, in Hungarian, there is no change in the inflectional morphology or the type of construction if the AGENT is mapped to the Topic or contained within the comment. It is important to note that a passive construction must be used in English if the speaker wishes to topicalize the PATIENT (see the translation in (7b)). Furthermore, the contrast between (7a) and (7b) does not entail a difference in Voice in Hungarian. A closer look at the translations in (8) below shows that English speakers must resort to using other constructions like left dislocation or cleft constructions to express what Hungarian expresses through word order and intonation.

- (8) a. [János]_{TOPIC} [[MARI-T]_{FOCUS} kérte fel]_{COMMENT}
 John Mary-ACC asked VM
 'As for John, it was Mary that he asked.'
- b. [Mari-t]_{TOPIC} [[JÁNOS]_{FOCUS} kérte fel]_{COMMENT}
 Mary-ACC John asked VM
 'As for Mary, it was John that asked her.' (adapted from Kiss 2002: 3)

In (8a) and (8b), the topicalized constituents are in sentence-initial position, and the focused constituents are in preverbal position. As it happens, this is a strict constraint on

⁵ Kiss (2002) points out that verbs in Hungarian often coexist with a verbal modifier (VM) which acts as an aspectual operator.

IS in Hungarian. In other words, in Hungarian, overt Topics must occur sentence-initially, and Foci must occur preverbally (Erteschik-Shir 2007). Crucially, the focused item in preverbal position receives main sentence stress. In fact, ungrammaticality can result when stress falls on a focused constituent that is not in preverbal position. This means that main sentence stress is correlated with a specific structural position. Consider example (9).

- (9) a. A KONCERTEN köszöntötte János Mari-t.
 the concert-on greeted John Mary-ACC
 'It was at the concert that John greeted Mary.'
- b. *A koncerten köszöntötte JÁNOS Mari-t. (Hunyadi 1996: 140)

The facts about Hungarian suggest that while Hungarian appears to have free word order (as seen in (6) above), in reality it is a discourse-configurational language given that word order is constrained by IS functions (Erteschik-Shir 2007; Kiss 1995).⁶

1.2 Information structure and word order in Hungarian-prime

As we have seen, word order and stress placement are intertwined in Hungarian. As such, I decided to invent a simplified version of Hungarian, Hungarian-prime, to test the saliency of cues. Hungarian-prime differs from Hungarian in two fundamental ways. First, unlike Hungarian, Hungarian-prime employs transparent case marking: *-lat* = nominative (NOM) and *-mek* = accusative (ACC). Hungarian does not exhibit a clear 1:1 relationship between the form of the inflection and grammatical function; for example, there are multiple possible accusative suffixes (*-t*, *-et*, *-ot*, etc.) which are constrained by vowel harmony. Clear 1:1 relationships are argued to simplify aspects of language acquisition (Slobin 1985), thus, I created explicit nominative and accusative case-markers for this study. Second, since both preverbal position and main sentence stress mark Focus in Hungarian, I created a clearer contrast between the salient factors under investigation. In particular, there is a different set of constraints in Hungarian-prime depending on the cue being tested. When investigating position, Foci in the test sentences are found in the preverbal position only. Keep in mind that the varying word order means that preverbal position can be either sentence-initial (left-periphery) or sentence-medial. Additionally, intonational cues are not present for position test sentences. When investigating prosody, Foci in the test sentences receive main sentence stress and are found in any position in any word order.

2. The acquisition problem

Discourse functions such as Topic and Focus are instantiated in different ways cross-linguistically (Jackendoff 2002; Lambrecht 1994; Van Valin and LaPolla 1997). IS is an

⁶ An example of a non-configurational language which exhibits truly free word order is Walpiri (see Austin and Bresnan 1996).

interesting phenomenon to explore from the perspective of language acquisition since language-specific implementations are part of what a language learner must acquire.

The literature shows that from very early on second language learners exploit IS to linearize their sentences even when their knowledge of inflectional morphology and grammatical constructions is severely limited (cf. various papers in Klein and Perdue 1992; Klein and Perdue 1993, 1997). In particular, research shows at very early stages of acquisition, learners of certain European languages (e.g. the languages studied in the European Science Foundation (ESF) projects⁷ (Perdue 1993)) follow the principles in (10).

(10) Klein and Perdue's Information Structure Principles

- a. Controller first:
What did Mary do? [She]_{CONTROLLER/AGENT/TOPIC} walked the dog.
- b. Focus last:
What did Mary do? She [WALKED THE DOG]_{FOCUS}

Klein and Perdue hypothesize that Agentive referents tend to be the first item in serial position and Foci tend to be the last item in serial position. Cross-linguistically, Focus can be marked intonationally or by clefting, but in second language learning, word order is primarily used (Klein and Perdue 1993, 1997). Crucially, Klein and Perdue impute the ability of second language learners to identify Focus as the last expression in an utterance. The principles in (10) are partially motivating the current research.

The first question that must be asked is whether or not the linearization principles outlined in (10) follow from universal properties of all human languages. If so, the principles are not acquired. What is acquired instead are manifestations of the target L2's word order. Regarding the current study, English and Hungarian exhibit different word order patterns and principles for organizing word order. Thus, learners who start from the principles in (10) will need to acquire the particular patterns in the L2 during the course of acquisition. On the other hand, if Klein and Perdue's IS principles reflect distributional properties of the languages studied in the ESF projects (Perdue 1993), then the principles in (10) result from the learners' analysis of the input. Since all of the languages studied in the ESF projects mark Focus positionally or prosodically, (10) may reflect learners' sensitivity to properties of the input such as position (left periphery vs. right periphery) or prosody. In any event, an investigation into the sensitivity of cues motivates a discussion of the salience of cues in the input.

2.1 Perceptual salience

The present study investigates the perceptual salience of position and prosody in the acquisition of Hungarian-prime. Specifically, the study outlined in section 3 is concerned with the ability of learners to perceive and process cues in the speech signal, and the ability

⁷ Target languages studied during the ESF projects: Dutch, English, French, German, and Swedish.

of learners to map these cues onto a semantic function (i.e. Focus). Perceptual salience can be defined as the ease of perceiving a given linguistic feature, unit, or structure (DeKeyser and Goldschneider 2005). Brown (1973) argues that perceptual salience correlates with aspects of the input such as the amount of phonetic substance, lexical stress level, and serial position of a word in a sentence. This study was designed to determine whether position or prosody is a more salient cue to Focus structure for second language learners.

At the word level, prosodic prominence arises from lexical stress (Halle and Idsardi 1995; Kager 1995). Importantly, lexical stress and sentence stress are connected: main sentence stress falls on the syllable of a word that has main lexical stress. Moreover, if lexically stressed syllables are perceptually salient for L2 learners, we would expect that focally stressed syllables, i.e. syllables that receive main sentence stress as a result belonging to the focused constituent, would also be perceptually salient.

In relation to positional effects, Barcroft and VanPatten (1997) and Rast (2008) argue that words are more easily segmented and subsequently acquired when they exist at the left or right edge of a sentence. When recalling serially ordered material, learners are more likely to recall the first items they hear (because the items have been rehearsed) or the last items they hear (because the memory trace of the item is stronger). Recall Klein and Perdue's Information Structure Principles which suggest that learners construe the last part of the sentence as the Focus. Given this, we would expect that the focused constituents which appear at the right edge of an utterance are more salient for the L2 learners.

3. The study

The study outlined in this paper is a *first exposure* study. The learners, native speakers of English, were exposed to the target L2, Hungarian-prime, for the first time during the experimental session. First exposure studies allow researchers to deal with certain assumptions about Transfer.⁸ In particular, researchers can capture a learner's starting point on specific tasks. In the case of first exposure studies, researchers can assume that the learner's starting point is their L1.

This study was designed to explore the acquisition of IS, specifically Focus structure, in Hungarian-prime, with the goal of answering the following research question: Which is a more salient cue for English speakers to Focus structure in Hungarian-prime: position or prosody? This section outlines the methodological details of the study.

3.1 Participants

Thirty-six participants (16 male, 20 female) were tested in this study. Participants were randomly assigned to one of two test groups; Group 1 completed the position version of the experiment, and Group 2 completed the prosody version. Each group had eighteen participants in total. Participants were recruited through advertisements placed around the University of Calgary campus. The mean age of participants was 26.1 years old. All participants were native speakers of English, though most reported having some experience

⁸ Unfortunately, due to space constraints, an in-depth discussion about Transfer will not be provided.

learning a second language. Crucially, none of the participants had any knowledge of Hungarian.

3.2 Design

To test the saliency of the two different cues, this study uses a between-subjects design; a between-subjects design minimizes participant fatigue, practice, and carryover effects. Before completing the experimental task, participants were asked to complete vocabulary and word order training tasks. Since this is a first exposure study, these tasks were a necessary component since presumably participants needed some basic vocabulary and exposure to word order variations before they could learn IS functions. Upon arriving in the lab, participants were asked to read and sign a consent form. All participants then completed a demographic information and language background questionnaire. A digit-span task was administered to test for potential working memory deficits. Participants completed four experimental tasks in total: i. vocabulary learning task, ii. word order training task, iii. computer-based translation task, and iv. experimental task.

3.2.1 Auditory stimuli

Auditory stimuli were produced by a native speaker of Hungarian and recorded using a Edirol R-09 Portable WAVE/MP3 recorder at a sampling frequency of 44100 Hz. The speaker was instructed to record the position test items with a flat, neutral intonation, and the prosody test items with specific words pronounced as more prominent.

The entire Hungarian-prime vocabulary is made up of thirty-five linguistic items, eighteen nouns and seventeen verbs. Carroll (2012, 2014) argues that first exposure learners can segment names from an auditory signal on the basis of two exposures if the names are cognates of English. Since vocabulary learning was not the focus of the study, vocabulary items included 8 proper names (all cognates of English) and 3 cognate nouns.

3.2.2 Visual stimuli

Illustrations were paired with auditory stimuli. A freelance artist (an undergraduate student at the University of Calgary) was given a list of English sentences that corresponded to the Hungarian-prime experimental items and asked to draw pictures to match with the stimuli. Pilot-testing showed that each illustration was interpreted as intended.

3.3 The tasks

3.3.1 Vocabulary learning task

Participants were asked to complete a vocabulary learning task. Each participant was given up to 10 attempts to score 100% on this task; a score of 100% was required for the participant to move on to the next task. Participants were presented with a Hungarian-prime word auditorily while the English translation was presented on screen. After the thirty-five

vocabulary items were presented in random order, participants were presented with the Hungarian-prime words one-by-one and asked to choose the correct English translation by entering a number (1-35). Each number corresponded to an English translation of one of the Hungarian-prime words. This task was repeated until the participant reached criterion. The design of this task is based on a series of word learning studies in Carroll 2012 and 2014.

3.3.2 Word order training task

This task was designed to show participants that Hungarian-prime allows many different word orders and that these variable word orders can correspond to a simple declarative sentence in English. First, participants were presented with an illustration and a Hungarian-prime sentence on screen, while simultaneously being presented with the sentence auditorily. Next, they were asked "Does this sentence accurately describe what is happening in the picture?". Participants were instructed to indicate their choice (yes or no) with a key press. In order to show that multiple word orders are possible, the correct response was "yes" in all cases. Crucially, participants were given the same detailed feedback regardless of if they responded "yes" or "no".

One possible criticism is whether this task communicates that Hungarian-prime allows multiple possible word orders, or whether participants could process the semantic roles in the sentences.⁹ To mitigate this issue, feedback contained a discussion of semantic roles. An example of the feedback given to participants can be seen in (11).

(11) Hungarian-prime allows many different word orders.

The receiver of the action can be first, the doer of the action can be second, and the action word can be last.

Debriefing after pilot testing showed that feedback in the form seen in (11) was easy to understand and useful in regards to completing the task.

3.3.3 Computer-based translation task

For this task, participants were presented with a Hungarian-prime sentence and two English translations in text on screen. The task of each participant was to choose the correct translation for the Hungarian-prime sentence, and indicate their choice with a key press. This task was designed to have participants use what they learned in the word order training task.

In order to successfully complete the experimental task, participants must come to know that Hungarian-prime words exhibit case-markers which are dependent on the semantic role they play in a particular sentence. This contrasts with their native language, English, in which semantic roles usually correlate to sentence position.

⁹ Thank you to Ana Teresa Pérez-Leroux for the in-depth discussion on this topic during the Special Workshop on Language Acquisition at the 2016 meeting of the Canadian Linguistic Association.

Participants were given feedback on each sentence informing them if their response was correct or incorrect. If the response was incorrect, the feedback screen also prompted them to remember that Hungarian-prime allows many different word orders.

3.3.4 Experimental task

Participants in Group 1 (position) and Group 2 (prosody) completed a *forced-choice picture-based task*. An illustration was presented on screen with a simple question in English, e.g. *What is Mary doing?* or *Who is waving at Edward?* presented underneath the picture. Participants heard two sentences in Hungarian-prime, but did not see them written on screen. The task was to choose which of the two sentences accurately answered the question. Participants were asked to indicate their response with a key press. Participants in each group were given 16 target sentence pairs and 16 distracter sentence pairs, for a total of $n = 64$ sentences. Each sentence pair consisted of a target sentence and a foil. Target sentence pairs tested properties of Focus structure. Crucially, participants Group 1 were exposed to items which tested the preverbal Focus position, and thus showed differences in the argument in preverbal position but had neutral intonation (see (12)). Group 2 was exposed to test items which tested prosodic properties of Focus, and thus showed differences in prosodic marking but had consistent word order (see (13)).^{10,11} Distracter sentence pairs were designed to test vocabulary knowledge (see (14)).

¹⁰ A prosody perception pilot test was used to ensure that focused items in the position experiment did not receive main sentence stress, and that focused items in the prosody experiment did. Four participants who completed the experiment and four who did not ($n = 8$), were asked to listen to 64 sentences and circle what they thought was the most "loud" or "prominent" in the sentence. For the group who did not complete the experiment, 32/32 of the position Focus items were not identified as prominent, and 32/32 of the prosody items were identified as prominent, by all participants. For the group who did complete the experiment, 31/32 of the position Focus items were not identified as prominent, and 28/32 of the prosody items were identified as prominent, by all participants. The results of the prosody perception pilot test show that, on the whole, test items were perceived as intended by native speakers of English.

¹¹ Laura Colantoni (p.c., May 30th, 2016) pointed out that speakers of English require a low pitch directly preceding the focused item to perceive that focused item as prosodically prominent. An analysis of intensity and pitch contours for all stimuli items was conducted using Praat Version 5.2.17 (Boersma & Weenink 2011). For all position stimuli items, the maximal pitch and intensity measurements for the sentence did not match the pitch and intensity measurements on the item in preverbal (target) position. For all prosody stimuli items, the maximal pitch and intensity measurements for the sentence did match with the pitch and intensity measurements on the focused item. A detailed analysis of pitch and intensity for content preceding the focused items still needs to be conducted, however, the prosody perception pilot test shows that participants were perceiving the stimuli as intended.

(12) Example test item for Group 1 (position experiment)



Who is tripping Alfred?

Target: Alfrédmek **Annalat**_{FOCUS} elgán
 Alfred-ACC **Anna**-NOM trip
 'It is Anna that is tripping Alfred.'¹²

Foil: Annalat **Alfrédmek**_{FOCUS} elgán
 Anna-NOM **Alfred**-ACC trip
 'It is Alfred that Anna is tripping.'

(13) Example test item for Group 2 (prosody experiment)



Who is pointing at Mary?

Target: Marimek rafog **PETER**lat
 Mary-ACC point at **PETER**-NOM
 'It is Peter that is pointing at Mary.'

¹² It is important to note that whenever a participant saw a translation of a sentence, the translation was presented in simple declarative form, i.e. participants were never given cleft sentences. The cleft sentences in the examples are used to illustrate properties of Focus structure.

Foil: **MARI**mek rafog Peterlat.
 MARI-ACC point at Peter-NOM
 'It is Mary that Peter points at.'

(14) Example distracter item (position and prosody experiments)



What is Katherine doing?

Target: Katalinlat hajít korongmek.
 Katherine-NOM throw frisbee-ACC
 'Katherine is throwing a frisbee.'

Foil: Katalinlat iszik szódamek.
 Katherine-NOM drink soda
 'Katherine is drinking soda.'

Participants must compute different kinds of relations to answer the question. First, they must figure out the semantic roles that the verb assigns to its arguments. Thus, the learner must compute something like $TRIP(x, ALFRED)$, where the value of x is supplied by either the target or foil sentence. The participant must also determine that the content of the correct choice is cued by information in the illustration. Furthermore, in the case of the position group, participants must determine which position is the cue to Focus in Hungarian-prime. Conversely, participants in the prosody group must associate sentence stress to Focus. If position turns out to be the salient cue, then participants have established mental representations of the word order variations of the target language. However, if prosody turns out to be a salient cue, then participants have established some sort of prosodic representation. This means that the learning task is different for each group. The position group must encode mental representations of word order variations and then map them to Focus; alternatively, the prosody group must encode prosodic representations and then map them to Focus.

3.4 Predictions

Both Hungarian (and Hungarian-prime) and English mark Focus with main stress, however, in Hungarian (but not Hungarian-prime) main stress is linked to a structural position. Recall that for Group 1, Focus in Hungarian-prime has a set structural position (preverbal) and for Group 2, Focus is marked by main stress. MacWhinney (2004) claims that *whatever can transfer, will transfer*. Since Focus is marked with main stress in the participants' L1 and L2, it is reasonable to expect that transfer will take place. Thus, one prediction is that Group 2 will have overall higher accuracy scores than Group 1.

Furthermore, Klein and Perdue claim that learners use the principles in (10) to linearize sentences from the early stages of second language acquisition. Specifically, given Klein and Perdue's IS Principles outlined in (10), we would expect that participants will score higher on test items which have Focus last, i.e. after the Controller in serial position.

4. Results and discussion

The vocabulary learning task required participants to go through training trials until they scored 100%. All participants successfully met criterion; the mean number of training trials was 6.03 ($SD = 2.41$). Importantly, scores on the distracter items in the experimental tasks show that participants have indeed learned the vocabulary enough to perform significantly above chance, Group 1 (position): $t(17) = 10.45, p < .001$ ($M = 85.45\%$, $SD = 14.38$), and Group 2 (prosody): $t(17) = 13.37, p < .001$ ($M = 86.11\%$, $SD = 11.46$). Additionally, participants scored significantly above chance on the computer-based translation task, $t(35) = 4.08, p < .001$, suggesting that they have learned that Hungarian-prime allows multiple word orders.

In regards to the experimental task, mean accuracy scores for Group 1 ($M = 48.26\%$, $SD = 13.18$) were not significantly different from mean accuracy scores for Group 2 ($M = 51.74\%$, $SD = 10.68$), $t(34) = 0.87, p = .391$. This suggests that prosody is not a more salient cue to Focus structure than position. Furthermore, participants in Group 1 did not perform significantly above chance, $t(17) = -0.559, p = .708$ ($M = 48.25\%$, $SD = 13.19$), and participants in Group 2 also did not perform significantly above chance, $t(17) = 0.690, p = .250$ ($M = 51.75\%$, $SD = 10.69$). These results suggest that the participants were not able to map word order variations (Group 1) or prosodic representations (Group 2) to Focus structure. The null results on the experimental tasks are surprising. As previously mentioned, IS is a universal property of language and available in the learners' L1. Moreover, IS is marked prosodically in English, the learners' L1. Thus, it is unclear why learners should not be able to instantly map the intonational cue to Focus.

An analysis of the linear position of Focus was also completed as the study tested the claim that learners use principles of IS to linearize sentences from the initial stages of second language acquisition (Klein and Perdue 1993, 1997). If learners were following the principles outlined in (10), higher scores on stimuli items with Focus in final position would be expected. Although the difference is only approaching significance at an alpha level of .05, scores on items with Focus first ($M = 53.54$, $SD = 20.70$) were higher than

scores on items with Focus last ($M = 45.28$, $SD = 20.00$), $t(70) = 1.72$, $p = .089$. This finding conflicts with the claim that learners at all proficiency levels follow the principle of *Focus last* in sentence linearization, suggesting that learners are not using the *Controller first/Focus last* principles of IS to linearize sentences.

The methodology used in this study makes certain assumptions about learners' mental representations at both initial stages of acquisition (on first exposure to the L2), and after they have been exposed to some vocabulary and basic sentences with word order variations. However, a better understanding about what learners' mental representations are at each stage in the acquisition process is needed in order to determine how learners encode word order and prosody, and subsequently map them to Focus structure. Moreover, it is crucial to decide what preverbal position in Hungarian-prime is to understand where the breakdown of encoding is taking place. Current mainstream generative syntactic theories assume linearization is part of Phonological Form, but one might ask if there are linearizations that must be computed syntactically (i.e. Phrase Structure Rules). In any event, more research into the content and interaction of learners' mental representations is needed before we can determine how salient cues are encoded and mapped to Focus structure.

5. Conclusion

The study presented in this paper investigated whether position or prosody was a more salient cue to Focus structure in Hungarian-prime. Thirty-six native speakers of English were tested on first exposure to the target L2, Hungarian-prime, eighteen participants in the position group, and eighteen in the prosody group. There was no significant difference on accuracy scores between the group that was exposed to positional cues and the group that was exposed to prosodic cues. Given that the learners' L1 and L2 both mark Focus prosodically, it is unclear why learners are not mapping intonational cues to Focus. Moreover, it appears as if learners are not using Information structure to linearize sentences on first exposure. This finding conflicts with the findings of the European Science Foundation projects (Perdue 1993), which suggest that learners use the principles *Controller first/Focus last* (Klein and Perdue 1993, 1997) to linearize their sentences from the early stages of second language acquisition. Overall, the findings of this study suggest that a more detailed understanding of the content and interaction of learners' mental representations is needed before we can know how learners map salient cues to Focus structure in their L2.

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