

# The Acquisition of Second Language Phrasal Stress: A Pilot Study

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## 1. Introduction

In this paper, I am going to address the broad issue of acquiring the sound system of a second language. There are many aspects of the phonological system that must be acquired. There will be differences in the consonantal and vocalic systems of the L1 and L2 that must be sorted out; there will also be aspects of the prosodic system such as stress and intonation to be internalized. My broad research programme has been concerned with investigating the acquisition of prosodic phenomena by second language learners. In a number of previous studies, I have looked at the acquisition of English word stress by speakers of Polish and Hungarian (Archibald, 1993a), Spanish (Archibald, 1993b) and Chinese and Japanese (Archibald, 1995). In addition, I have attempted to describe mechanisms that could account for the change in interlanguage grammars over time (Archibald, in press, 1994). Let us now turn to a more detailed discussion of linguistic stress.

Word stress involves the prominence of a syllable within a word. For example, the word *aróma* has the second syllable as the most prominent while the word *cínema* has the first syllable as the most prominent. Phonetically stress is implemented by an increase in some combination (which varies from language to language) of pitch, loudness, and length. In English, as well as in many other languages, stress and vowel reduction are intimately related. In a word like *banána* the stressed vowel (in the second syllable) retains full vowel quality (in this case [æ] in North American English) while the two vowels that lack stress (in the first and third syllables) have their quality reduced to a schwa ([ə]). The

phonetic implementation of the L2 stress and vowel quality also has to be learned, but I will not be addressing that issue.

In this paper, I discuss the topic of sentence stress, or phrasal stress. Just as when syllables combine to form a word one of them receives greater prominence, so too when words combine to form a sentence one of the words will receive greater prominence. In a sentence like "I gave the book to *Bob*", the word *Bob* usually is the most prominent in neutral discourse contexts. Of course, there are situations where native speakers may choose to stress other words in the sentence. Non-native speakers have to learn when to appropriately assign correct phrasal stress. The study of phrasal stress in a second language has received limited attention in the literature, but see James (1988), Juffs (1989) and Kidd (1989). I am going to describe two case studies of non-native speakers of English acquiring the phrasal stress of English. One of the subjects is a native speaker of Polish, while the other is a native speaker of Hungarian.

Determining phrasal stress in a language is somewhat messier than determining word stress because it involves two interfaces: (1) between syntax and phonology, and (2) between pragmatics and phonology. In this paper, I will not be addressing the pragmatic factors involved due to limitations of the research design under which the data were collected.

There are many issues that must be addressed at the phonology-syntax interface as well-documented in Selkirk (1984, 1995), and Inkelas & Zec (1990). Of particular concern to the issues raised in this paper is the construct of syntactic *focus* and how it interacts with the phonological system to produce phrasal stress. I will briefly discuss each of these constructs. First let us look at *phrasal stress*.

## 2. Phrasal Stress

Within the study of stress systems, a distinction is usually made between determining prominence of syllables within a word (word stress) and determining prominence of words within a phrase (phrasal stress). As Halle and Vergnaud (1987) point out, words that are grouped into phrases don't have their individual contours affected<sup>1</sup>. On the whole, the main stress of one word is given greater prominence. When two or more stressed words form a constituent, the constituent boundaries are metrical constituents that are *un-*

*bounded* (as opposed to binary) and *right-headed*, examples are shown in (1) and (2).

- (1) Jesus *wépt*.
- (2) The people of *Judéa*.

It has long been debated whether the prominence of a word in a phrase is determined by structural (or syntactic) factors or pragmatic (or discourse) factors. Obviously discourse factors are involved. If we look at a sentence like (3), there are contexts which could be imagined where any of the words are given prominence.

- (3) My brother hates dogs.

The choices are shown in (4) - (7).

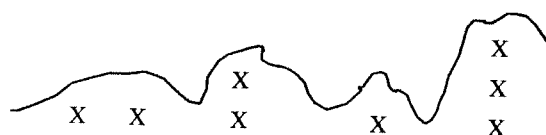
- (4) *My* brother hates dogs.
- (5) My *brother* hates dogs.
- (6) My brother *hates* dogs.
- (7) My brother hates *dogs*.

However, given a neutral context, it is generally agreed that the most prominent element in an English phrase is the rightmost one. In this case, the contour shown in (7) would be the neutral context. The assignment of phrasal stress in these neutral contexts appears to be governed by structural principles.

Halle and Idsardi (1995) demonstrate this with the sentence shown in (8).

- |   |   |    |   |    |        |
|---|---|----|---|----|--------|
|   |   |    |   | x  | Line 2 |
|   |   | x  |   | x) | Line 1 |
| x | x | x) | x | x) | Line 0 |
- (8) Their new Lincoln Continental was made in California.

The x's are grid marks that indicate prominence. On line 0 we see that the content words of the sentence project grid marks, as opposed to the function words which do not (and are, as a result, unstressed). Within a phrase, on line 1, the rightmost elements are stressed, (*Continental* and *California*). Within the sentence, too, shown on line 2, the rightmost element receives the greatest stress (*California*). In other words, we have an unbounded right-headed metrical constituent. In this way, structural principles determine the rhythmic pattern of the elements in a sentence. Different degrees of prominence can be read directly off the number of grid marks. If we were to overlay an intonation pattern on top of this grid we would note the pattern shown in (9):



(9) Their new Lincoln Continental was made in California.

### 3. Focus

One of the functions of phrasal stress is to manifest *focus*. Kidd (1989) looks at the relationship between focus, phrasal stress and syntactic structure. Phrasal stress is a phonological term concerning acoustic prominence whereas focus is a pragmatic term that has to do with highlighting salient information in the discourse. English has the option of highlighting information via either phonological or syntactic means. Phonologically we can stress things as shown in sentences (4) - (7). Syntactically, we can focus elements via overt movement in sentences like (10) and (11).

(10) It was dogs, my brother hated.

(11) Dogs, he hates with a passion.

These focus positions in English appear to arise as a result of movement insofar as they respect constraints on movement such as subadjacency (Brunson 1992). So-called Topic structures in English ('Dogs, he hates them') do not respect the same constraints, and are argued to be base-generated in a higher functional projection (Brunson 1992).

Note that the underlined items receive phonological prominence as well as syntactic focus. Other languages, like Hungarian as we shall see, have only the syntactic option available to them (at least for contrastive focus).

The question of whether or not we can, in fact, distinguish focus from phrasal stress has received a fair amount of attention in the literature. Bolinger (1972) and Halliday (1970), for example, say no. Chomsky (1971) and Selkirk (1984) for example, say yes. For Halliday, in the functionalist tradition, stress is assigned to the new information contained in a sentence. The fact that English tends to have rightmost phrasal stress falls out from the Given-New order of English. This can be seen in the exchange shown in (12).

- (12) A: My brother isn't scared of anything.  
 B: My brother is scared of *dogs*.

Under this view, phrasal stress reflects not syntactic structure but information structure.

Chomsky and Halle (1968), on the other hand, proposed the Nuclear Stress Rule to account for the rightmost nature of phrasal stress. The Nuclear Stress Rule is contrasted with the Compound Stress Rule. The difference between the two can be seen in the rightmost stress of phrases like "a green *house*" as opposed to the leftmost stress of a compound like "a *greenhouse*." Without going into the esoteric details of the unarguably complex rules, suffice it to say that it was clearly a structural account of phrasal stress.

Bolinger (1972) argued that it was semantic weight rather than syntactic structure that determined whether an element received stress. He noted that certain elements that are predictable from the context (or have low semantic weight) do not get stressed even when they are rightmost in a phrase, as shown in (13):

- (13) *cráwling* things  
       *geráanium* plant  
       *élm* tree

These examples demonstrate that it is not always the rightmost element in a phrase that receives the stress. Rochemont (1986) though, argues that facts such as those presented by Bolinger can be accounted for via a syntactic mechanism. He talks of *deaccenting* these predictable elements that are construable from context. Whatever mechanisms are used, or principle consulted, clearly there is an interaction of some sort between the syntax, the phonology and the context.

#### 4. The Influence of Syntax

Syntactic factors such as argument structure have also been called upon to explain the assignment of phrasal stress. Schmerling (1976) suggested that predicates receive lower stress than their arguments. Gussenhoven (1983) divided each sentence into *focus domains* (which are determined by argument structure). Every focus domain is assigned a single accent. Selkirk (1984) suggested that prominence is assigned to word-level constituents at S-structure.



accounted for by projection of grid marks and parentheses. We saw the basic mechanisms of this model at the phrasal level in (8). At the word level, either a syllable or a mora can project a grid mark onto the line 0. Parentheses (either right or left) can also be projected (for example by heavy syllables) and result in the delineation of metrical constituents. Grid marks at the edge of a constituent (i.e. the head) are projected onto the next higher line.

Kidd (1989) proposes that S-structures are marked for focus with F-nodes (following Jackendoff, 1972) and that from this, phrasal stress patterns are generated. So, for example, a sentence like "my brother hates dogs" could have a focus node marked somewhere on the S-structure in order to indicate whether the focus is e.g. "my" or "brother". Stress is determined by an algorithm of interaction between F-nodes and accent.

As we can see, there have been a number of attempts in a variety of formal frameworks to account for the computation of phrasal stress. In this paper I will mainly be concerned with descriptions of the implementation of phrasal stress by second language learners, not the computation of it. For the most part, I will be using the notation of Idsardi (1992) to illustrate the patterns as I find his theoretical machinery of grid marking and projection of elements to be appealing in their parsimony and learnability (see Drescher, to appear).

## 6. Polish Phrasal Stress

I would now like to consider some of the characteristics of the L1's in question. First let's look at phrasal stress in Polish.

Polish prefers sentence final stress, as shown in (15).

- (15)
- |  |            |       |         |
|--|------------|-------|---------|
|  |            |       | x       |
|  | x          |       | x       |
|  | Przyjechła | młoda | kobieta |
|  | arrived    | young | lady    |
|  |            |       | x       |
|  | x          | x     | x       |
- 'The young lady arrived.'

But the stress shifts to the Left in Wh questions, as shown in (16)

- (16)
- |        |         |   |             |
|--------|---------|---|-------------|
|        |         | x |             |
|        |         | x | x           |
| Jakimi | liniami |   | leciałeś?   |
| which  | airline |   | did-you-fly |
|        |         | x |             |
|        |         | x | x           |
- ‘Which airline did you fly?’

Final arguments get stress over adjuncts, as shown in (17):

- (17) (a)
- |      |        |   |                     |  |
|------|--------|---|---------------------|--|
|      |        |   | x                   |  |
|      |        | x | x                   |  |
| x    | x      |   | x                   |  |
| duża | puszkę |   | robaków             |  |
| big  | can    |   | of worms (genitive) |  |
|      |        |   | x                   |  |
| x    | x      |   | x                   |  |
- A big can of worms.
- (b)
- |    |       |           |    |        |       |
|----|-------|-----------|----|--------|-------|
|    |       |           | x  |        |       |
|    | x     |           | x  |        | x     |
|    | x     |           | x  |        | x     |
| na | małym | krzeselku | // | nad    | rzekę |
| on | small | stool     |    | beside | river |
|    |       |           |    |        | x     |
|    |       | x         |    |        | x     |
|    | x     |           | x  | x      | x     |
- ‘On a small stool beside the river.’

In summary, Polish tends to have rightmost prominence (like English) but under certain conditions, the stress can shift to the left (like English).

## 7. Hungarian Focus

Now, let's look at focus in Hungarian following Horvath (1985). Horvath argues that the Hungarian focus position is immediately pre-verbal. The focus slot is an operator position (i.e. has scope). This is consistent with the previous positions mentioned, that focus should be marked at S-Structure. Focus at S-Structure allows for interpretation in Logical Form (LF) and stress assign-



ment at Phonetic Form (PF). According to Horvath, Hungarian has no phonological focus assignment.<sup>3</sup> Szilvia Papp (p.c.) suggests that Hungarian allows phonological prominence to be assigned to new information (i.e. informational focus), but agrees that contrastive focus can only be achieved syntactically. A syntactic element can be focussed in Hungarian by moving into the pre-verbal position as shown in (18).

- (18) a. *testvér + em+nek vanna+k kutyá+i a + ház + á + l*  
 brother + my +GEN have+ 3 dog+PL the+house+GEN + l  
 My brother (i.e. not my sister) keeps dogs in the house.
- b. *testvér + em+nek a + ház + á + ban vanna+k kutyá+i*  
 brother + my +GEN the+house+GEN + in have + 3 dog + l  
 My brother keeps dogs in his house (i.e. not in his yard).
- c. *kutyá+i vanna+k testvér + em+nek a + ház + á + ban*  
 dog + PL have + 3 brother + my +GEN the+house+GEN + in  
 My brother keeps dogs (i.e. not cats) in his house.

Focus assignment in Hungarian is, therefore, more restricted than in English which can implement contrastive focus either phonologically or syntactically as shown in (19):

- (19) A: Where're my dogs?  
 B: I thought you said 'dogs', nevermind.  
 or  
 B: 'Dogs' you said, nevermind.

Also, according to Kornai and Kálmán (1988), the basic intonation pattern of Hungarian sentence intonation is Low High Low (LHL). This becomes relevant when we look at the production of phrasal stress by native speakers of Hungarian.

## 8. The Experimental Procedure

The data I am discussing in this paper were gathered as part of the data collection for Archibald (1993a); a study of L2 word stress. In that study twenty-three Polish and twenty Hungarian subjects had to read both a list of words (e.g. "aroma") and a list of sentences (e.g. "The thing I love about coffee is the *aroma*") out loud. The sessions were recorded, transcribed by two

Horvath  
 the focus  
 previous  
 us at S-  
 assign-

researchers, and stress placement was analysed on the target words. The subjects were all adults at a Canadian college. The Polish subjects had a mean age of 34.3 years while the Hungarian subjects had a mean age of 31.7 years. The Polish subjects had studied English for a mean of 1.9 years while the Hungarian subjects had studied for a mean of 1.3 years. No significant differences were found between the two populations in terms of age, length of time studying, level of proficiency or vocabulary knowledge of the test items in question.

The word- and sentence-level tasks were administered to see if the word list task would lead to significantly different results than the more cognitively demanding sentence task. They did not. The subjects placed the word stress in the same position regardless of whether the word was pronounced in isolation or positioned in a sentence. In Archibald (1993a) I only analysed the production of the target words (which were always in sentence final position). However, I also had the recordings of all the subjects speaking the whole sentence. These are the recordings that I have gone back to analyse. The subjects had to read thirty-five sentences out loud. The rhythm pattern was marked, and the levels of greatest prominence indicated. Independent scoring was done by a research assistant. Any disagreements in transcription were discussed until agreement was reached.

I analysed the sentence productions of one native speaker of Polish and one native speaker of Hungarian. The pilot nature of this step in the analysis was to see whether any L1 influence could be noted in the phrasal stress of these non-native speakers. If differences were found it would provide the impetus to look at larger numbers of subjects in order to make statistically significant observations. I am currently engaged in the transcription and analysis of the other subjects' sentences. Polish and Hungarian were chosen for the (1993a) study due to their properties when it comes to word stress (Polish primarily penultimate; Hungarian primarily initial). However, as we have seen they also have different characteristics regarding phrasal stress and focus. This property makes them interesting candidates for a second language acquisition study in this phonological domain. Hungarian does not usually allow phonological realization of focus and moves the focussed element into the pre-verbal slot. Polish is able to move the stress in the phrase to focus an element, so that not only the rightmost element is most prominent. And, as we saw in (17b), Polish (like English and unlike Hungarian) is capable of having more than one peak of prominence.

These facts about Polish and Hungarian had a significant influence on their production of English phrasal stress. I turn now to a discussion of the performance of the two subjects.

### 9. The Hungarian Subject

The Hungarian subject showed decided L1 influence on his production of English rhythmic patterns. This is not too surprising as he was at a beginning level of proficiency in the community college where he was studying. It is well documented that an interlanguage of a beginning learner is more influenced by the structure of the first language than an interlanguage of an advanced learner. Major's (1987) Ontogeny model makes this explicit.

The basic fact about English rhythm that only the major lexical categories receive stress had been acquired by the subject, as shown in (20). In all of the examples, an entire word is marked to be stressed. I will not graphically represent the internal structure of the word's stress pattern, as it is not relevant here.

(20)

			x	
x	x		x	x

The thing I love about coffee is the aroma.

The two dominant patterns that the subject produced were (1) to stress a verb in the sentence (on 17 out of 35 sentences (49%)), as shown in (21):

(21)

			x	
x	x		x	x

In the summer I like to visit Manitoba.

or (2) to stress the element immediately to the left of the verb (on 7 out of 35 sentences (20%)), as shown in (22):

(22)

	x				
x	x	x	x		x

I have never met anyone from Minnesota.

Together these two patterns account for 24 out of the 35 sentences (69%).

The two most notable things about the sentence rhythm of the Hungarian subject were (1) that nearly all the sentences had only one prominent element (33 out of 35 sentences (94%)), and (2) that the pattern was almost always a LHL pattern which Kornai and Kálmán (1988) have argued to be the basic intonation pattern of Hungarian. There was some evidence that the Hungarian subject was able to implement focus appropriately phonologically but only in 7 of the 35 sentences (20%). This is shown in (23).

- (23)
- |  |   |   |   |   |  |   |
|--|---|---|---|---|--|---|
|  |   |   | x |   |  |   |
|  | x | x | x | x |  | x |
- We can't talk about that, it's not on the agenda.

So, the subject may have been starting to acquire English-like focus, but most of the productions were still heavily influenced by characteristics of the L1. See Appendix A for a full listing of the Hungarian subject's production.

## 10. The Polish Subject

Now let's look at the Polish subject, who shows a greater variety in stress patterns. Like the Hungarian subject, the basic pattern of stressing the content words was acquired by the Polish subject. However, she behaved noticeably differently from the Hungarian subject when it came to sentence stress. She was at a slightly higher level of proficiency than the Hungarian subject (intermediate). For one thing, the dominant pattern was to have two peaks of prominence within a sentence. Thirteen out of thirty-five (= 37%) had one prominent peak while twenty-two out of thirty-five (= 63%) sentences had two. First let me talk about the sentences that had two peaks of prominence. One way of getting a picture of the subject's rhythmic pattern is to see whether the prominent element of the phrase was at the left or the right edge of the constituent. All but one of the two-peaked sentences have the first constituent strong on the Right. The sentences vary then between:

Right Right (RR) as shown in (24):

- (24)
- |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
|  |   |   | x |   |   | x |
|  | x | x | x | ) | x | x |
- We can't talk about that // it's not on the agenda.

and Right Left (RL) as shown in (25):

- (25)
- |  |   |   |   |   |  |     |
|--|---|---|---|---|--|-----|
|  |   | x |   | x |  |     |
|  | x | x | ) | x |  | x x |
- In the opera company // *Bob's* the best baritone.

The question remains, though, as to what determines which sentences are RR and which are RL. First, let's look at the RR sentences. These seem to be the sentences that have native English rhythm. It seems as if for these 11 sentences (31%), the subject is treating the major syntactic constituents as metrical constituents and making the rightmost element the head. These sentences are shown in (26).

- (26)
- |  |   |   |   |   |   |   |    |
|--|---|---|---|---|---|---|----|
|  |   |   | x |   |   |   | x  |
|  | x | x |   | x | ) | x | x) |
- a. We can't talk about that // it's not on the agenda.
- |  |   |    |   |  |   |  |    |
|--|---|----|---|--|---|--|----|
|  |   | x  |   |  |   |  | x  |
|  | x | x) | x |  | x |  | x) |
- b. When it gets hot // I like to sit on the veranda.

For most of these sentences, there is a peak on each of two tensed clauses.

Now, let's look at the RL pattern which was produced in 10 of the 35 sentences (29%). In some of the cases I would argue that the subject is shifting stress leftwards for reasons of focus. In other words, the italicized word appears to be a reasonable candidate for focus, as shown in (27).

- (27)
- |  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
|  |   |   | x |   | x |   |   |
|  | x | x | ) | x |   | x | x |
- a. In the opera company // *Bob's* the best baritone.
- |  |   |   |    |   |  |   |   |
|--|---|---|----|---|--|---|---|
|  |   | x |    | x |  |   |   |
|  | x |   | x) | x |  | x | x |
- b. I can't come on Friday // I *guess* I'll have to cancel.

This reflects the subject's ability to shift the stress to the left.

### 10.1 Other Patterns

This, however, doesn't seem to explain what is going on in the remaining sentences. The italicized word does not appear to be a likely candidate for focus, as seen in (28). It could be argued from these sentences, that the subject

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is not always shifting stress to the left appropriately.

(28)

- a. I really didn't think // that the *building* would collapse.
- b. The exam committee // couldn't *reach* a consensus.

The LL pattern was produced in only 1 of the sentences (3%). This seems to be a case where stress is shifted leftwards for reasons of discourse focus, as shown in (29).

- (29) Don't *talk* to me, // *Bob's* the person you have to convince

## 10.2 Single Peak Sentences

There were 13 sentences that were produced with one major peak. Some of the sentences appear to have the nativelike characteristics of rightmost stress. They are shown in (30).

(30)

- a. I have never met anyone from Minnesota.
- b. She lives in the United States of America.

These sentences can be contrasted with those in (26) which had two tensed clauses, and two peaks. These sentences have one peak and one tensed clause.

Other sentences, though, had the main stress shifted leftward. Some appear to be reasonable candidates for stress shift as a result of discourse focus, as shown in (31).

(31)

x  
x            x            x

a. Roberta is not very easy to astonish.

x  
x            x            x            x            x

b. I find that position much too tiring to maintain.

But others, as shown in (32) do not appear to be reasonable pragmatic candidates for focus and remain unexplained<sup>4</sup>.

(32)

x  
x            x            x            x            x

a. You can see the sun a bit above the horizon.

x  
x            x            x            x

b. I was trying to fix the doors on the cabinet.

## 11. Conclusion

In this paper I have argued that the native language influences the production of phrasal stress in a second language. The Hungarian and Polish subjects who were tested, exhibited different patterns of stress placement. The Hungarian subject illustrated primarily a LHL rhythm pattern that was most likely triggered by properties of the L1. There was usually one focal position in English sentences produced, as in Hungarian.

The Polish subject had much more nativelike production with pitch prominence tending to be placed to the right edge of a metrical constituent. Stress contours were more nativelike in that there was often more than one peak.

An interesting question that remains is, of course, what the evidence could be for the Hungarian subjects that English focus can be signalled phonologically. I would speculate that it might be the case that we see the following patterns in languages regarding the marking of focus. We see languages that mark focus structurally (morphologically and/or syntactically) but not phonologically (e.g. Hungarian), plus we see languages that

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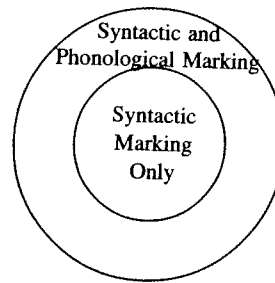


Figure 1. Subset Relations of Syntactic and Phonological Focus Marking.

focus structurally *and* phonologically (e.g. English), but we see *no* languages that mark focus phonologically but not structurally. As we have argued that focus is something marked on an S-structure, this would be what we would expect. Phrasal stress is not a purely phonological phenomenon, but is a phonetic manifestation of a syntactic construct. We can, therefore, note that the mechanisms involved lie in a subset relation of the sort shown in Figure 1.

Originally proposed by Wexler and Manzini (1987), the Subset Principle makes the claim that first language learners will always have the subset value as a default setting. This is relevant to second language acquisition in terms of the kind of evidence that is available to change from a subset grammar to a superset grammar, or vice versa. There will always be positive evidence (i.e. grammatical sentences in the input) to signal that the subset grammar is inadequate to account for the language of the environment. In this case, someone whose grammar licenses only syntactic focus will encounter positive evidence that the L2 allows phonological focus marking. Conversely, someone whose interlanguage grammar allows both syntactic and phonological focus marking will have to rely on negative evidence that the grammar is inadequate. That is to say, the learner will have to note the absence of any phonological focus marking in the ambient language. It has been suggested (e.g. White, 1989) that it is easier for learners to shift from the subset to the superset grammars (due to the availability of positive evidence) than vice versa. In this case, the presence of phonological marking of contrastive focus would act as positive evidence to the Hungarian subject that the L1 setting was incorrect. Or it may be that it is the grammatical category upon which the phonological prominence lands that provides the positive evidence of the erroneous setting. Hungarian was restricted in that only verbs could be



phonologically-focussed. When the Hungarian speaker hears a non-verb phonologically focussed in English, then positive evidence for the need to reset would be found<sup>5</sup>.

As I mentioned at the outset, this is a pilot study. The research design under which these data were collected was not meant to deal with issues of focus; it was designed to look at word stress. No contexts were provided to the subjects for the sentences they were reading. A design that controlled for context would, of course, be much more robust. Nor were syntactic structures controlled for in the sentences.

In spite of these limitations, there are still some worthwhile findings in this study. Clearly L1 factors influence the production of L2 phrasal stress. While I have only reported case studies here, and it is, therefore, difficult to generalize, the issue of L2 phrasal stress appears to be worth investigating further as it offers insights into the interfaces of pragmatics, syntax, and phonology in second language learners.

### Notes

Thanks to the institutions that allowed me access to their students for the original data collection: The University of Toronto, George Brown College, and the London Board of Education. Thanks also to Teresa Vanderweide and Corrie Rhyassen for helping to code the data. I am grateful to the editors and to two anonymous reviewers for their helpful comments in refining the description of this pilot study. The data were collected with the support of the Social Science and Humanities Research Council of Canada.

1. Except in cases of stress clash. E.g. New Yórk + Yánkees → Néw York Yánkees.
2. Come vedi, vado spesso da Benedetto.  
As you-see, I-go often to Benedetto.  
'As you see, I often go to Benedetto.'
3. Though Rochemont (personal communication) suggests that if the verb itself is the focus item, it may receive phonological prominence.
4. I should note that I checked grammatical category to see if it was a useful predictor of sentence stress, and could find no pattern. One reviewer suggests that the Polish subject is "stressing predicates". While this is a reasonable generalization, I still feel we need something finer-grained to tease apart the varying locations within a predicate.
5. Szilvia Papp (p.c.) argues that the subset relationship is actually the reverse of what I have argued, i.e. that Hungarian is a superset of English w.r.t. focus insofar as it allows presentational focus to be marked phonologically, and contrastive focus to be marked syntactically. I maintain that the mechanisms responsible for English left-dislocation ('Dogs, I hate with a passion') and clefting ('It's dogs I hate with a passion') are similar to

those of Hungarian contrastive focus in that they involve movement. The movement in Hungarian appears to be more local than in English. I expect we would see scope differences, but I do not see a subset/superset relation wrt the underlying mechanisms responsible for the syntactic implementation of contrastive focus in Hungarian and English.

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x

x x x x x x

11. I was amazed by what you were able to achieve.

x

x x x x x x x

12. You can't take part in the class but you're allowed to observe.

x

x x x x x

13. When I came to Canada, it was hard to adapt.

x

x x x x x x x

14. Don't talk to me, Bob's the person you have to convince.

x

x x x x x

15. They made Tony an offer he's going to consider.

x

x x x x

16. Edmonton was devastated by a hurricane.

x

x x x x x

17. They asked me but I don't want to be the candidate.

*Main Stress Pre-Verbal: 7*

x

x x x x

1. The thing I love about coffee is the aroma.

x

x x x x x

2. I have never met anyone from Minnesota.

x

x x x x x x

3. You can see the sun a bit above the horizon.

x

x x x x x x

4. I'm thirty years old and I still have my appendix.

x  
x x x x

5. It has a strong taste but I really like venison.

x  
x x x x x x

6. This new manuscript is quite difficult to edit.

x  
x x x x x

7. My brother always wanted to be a matador.

*Other Patterns: 9*

x  
x x x x x

1. We can't talk about that, it's not on the agenda.

x  
x x x x x x x

2. I really didn't think that the building would collapse.

x  
x x x x x

3. I find that position much too tiring to maintain.

x  
x x x x x x x

4. I don't think she's as old as she might appear.

x  
x x x x x x x

5. The delegates were still not sure who they should elect.

x  
x x x

6. Roberta is not very easy to astonish.

x  
x x x x x

7. In the opera company, Bob's the best baritone.

(ii) *Compound Stress*

- x  
x    x    x    x    x
8. The exam committee couldn't reach a consensus.

(iii) *Unexplained*

- x  
x    x    x    x
9. Some of the results were difficult to predict.

*Twin Peaks: 2*

- x    x    x    x    x    x
1. I can't come on Friday, I guess I'll have to cancel.
- x    x    x    x
2. When we all went to the zoo we saw an antelope.

**Appendix B****Sentence Stress by Pattern:  
Polish Subject****Twin Peak Sentences (22)***RR Sentences (11)*

- x    x    x    x
1. The thing I love about coffee // is the aroma
- x    x    x    x
2. It has a strong taste // but I really like venison.
- x    x    x    x    x
3. When we all went to the zoo // we saw an antelope.

- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & x & & & & & & & \end{array}$$
 4. He didn't read the book // he just read a synopsis.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x \\ & x & x & & & & & & \end{array}$$
 5. You can record over the songs // you want to erase.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & x & x & x & & & & & \end{array}$$
 6. I don't think she's as old as she might appear.
- $$\begin{array}{ccccccc} & & & & x & & x & & x \\ & & & & x & ) & x & & x \\ x & & & & & & & & \end{array}$$
 7. The delegates were still not sure // who they should elect.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & & x \\ x & x & x & & & & & & \end{array}$$
 8. I'm thirty years old // and I still have my appendix.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & & & & & & & & \end{array}$$
 9. When it gets hot // I like to sit on the veranda.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & & x \\ x & x & & & & & & & \end{array}$$
 10. We can't talk about that // it's not on the agenda.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & & & & & & & & \end{array}$$
 11. On Saturdays // I like to go to the cinema.

*RL pattern (11)*

- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & x & x & x & & & & & \end{array}$$
 1. They asked me // but I don't *want* to be a candidate.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & . & x & x & & & & & \end{array}$$
 2. This new manuscript is quite *difficult* to edit.
- $$\begin{array}{ccccccc} & & & & x & & x \\ & & & & x & ) & x & x & x \\ x & x & & & & & & & \end{array}$$
 3. When I came to Canada // it was *hard* to adapt.



x            x  
x    x )        x        x    x

4. In the opera company // *Bob's* the best baritone.

x            x  
x        x )        x        x        x

5. I can't come on Friday // I *guess* I'll have to cancel.

*Inappropriately Shifted Sentences*

x            x  
x    x        x )        x        x        x

6. When I was in school // I *learned* to throw the javelin

x            x  
x    x        x    x        x        x

7. The town asked for a big loan to *build* an arena.

x            x  
x    x    x        x )        x        x

8. You can't take part in the class // but you're *allowed* to observe.

x            x  
x    x    x )        x        x        x

9. I really didn't think // that the *building* would collapse.

x            x  
x        x )        x        x        x

10. The exam committee // couldn't *reach* a consensus.

*Appropriately Shifted Sentence (1)*

x            x  
x    x    x )        x        x        x

11. Don't *talk* to me, // *Bob's* the person you have to convince

**Single Peak Sentences (13)**

*Rightmost Stress*

x  
x    x    x    x            x

1. I have never met anyone from Minnesota.

- x  
x x x x x
2. She lives in the United States of America.

*Appropriate Stress shift sentences*

- x  
x x x x x
3. They made Tony an offer he's going to consider.
- x  
x x x
4. Edmonton was devastated by a hurricane.
- x  
x x x x
5. I was amazed by what you were able to achieve.
- x  
x x x x
6. My brother always wanted to be a matador.
- x  
x x x
7. Roberta is not very easy to astonish.
- x  
x x x x x
8. I find that position much too tiring to maintain.

*Erroneously shifted sentences*

- x  
x x x x
9. Some of the results were difficult to predict.
- x  
x x x x
10. The committee will support whatever you decide.
- x  
x x x x
11. In the summer I like to visit Manitoba.



FOCUS ON  
*Phonological  
Acquisition*

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