Recognizing 'then' as an Adverb: An Experiment with Brazilian Learners of English[*]

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1. Introduction

This study focuses on the acquisition of foreign language (FL), concentrating particularly on the position and interpretation assigned to the temporal adverb *then* by native speakers of Brazilian Portuguese (henceforth BP) learning English as a FL in private language schools. The presence of the temporal adverb *then* in a sequence of sentences in discourse influences its temporal interpretation. This adverb orders an event as occurring after another event (see example (2)) as opposed to (1), which has a 'grab-bag' interpretation; that is, the events are not temporally ordered with respect to each other and may occur at different, temporally unrelated times in the day (Thompson, 1999:125, examples (2a,b)):

(1) Mary went to the store. She fixed a faucet. She wrote a long overdue thank-you letter to her nephew. She read the morning paper.
(2) Mary went to the store. Then she fixed a faucet. Then she wrote a long overdue thank-you letter to her nephew. Then she read the morning paper.

According to Thompson (1999), several researchers have noted that the semantic role that temporal *then* plays depends on its position. The ordered reading results (Schiffrin 1992, Glasbey 1993, Spejewsky and Carlson 1993) when *then* occurs in clause-initial position as in (2) or in clause-medial position as in (3) below. When *then* occurs in clause-final position, however, the second event is interpreted as overlapping with the first event, that is, a cotemporal interpretation of the events is obtained, as in (4):

(3) Mary will speak to the reporters. Bill will then photograph her.
(4) Mary will speak to the reporters. Bill will photograph her then.

Following Thompson (*op. cit*.), let us refer to the first reading of *then* as ordered *then* and to the latter interpretation as cotemporal reading. Thompson *(op. cit.)* proposes an analysis for *then* which explains the correlation between its position and interpretation. She argues that because *then* occurs in different structural positions in the sentences, it interacts with the syntactic representation of tense in different ways, resulting in different readings.
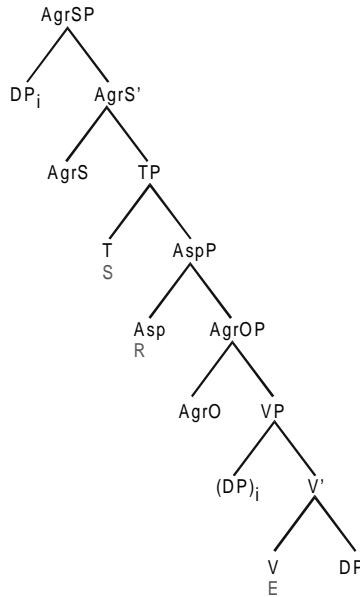
Taking into account that both interpretations are available in English, depending on the position of the temporal adverb *then*, two aspects call for evaluation when Brazilian students acquiring English as a FL are observed: (i) whether cotemporal reading is achieved, considering that this interpretation is becoming archaic in BP, and (ii) if there is any transfer from BP structure to English as a FL with respect to adverb placement, taking into consideration that Portuguese and English differ with regard to the position the verb occupies in the sentence structure, which implies a different position for the adverbs as well.

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2. *Then* as an overt marker of time

Thompson (1996, 1999) assumes that temporal information is not associated to TP only. She adopts Hornstein's (1990) Reichenbachian approach to tense and, following Hornstein (1990), she assumes that the Event time (E) is associated with VP, the Speech time (S) to TP, and proposes that the Reference time (R) be associated to AspP (Thompson, 1996: 15):

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                    AgrSP
                   /    \
                DPᵢ     AgrS'
                       /     \
                   AgrS       TP
                             /   \
                            T    AspP
                            S    /    \
                               Asp    AgrOP
                                R     /     \
                                  AgrO       VP
                                            /   \
                                       (DP)ᵢ    V'
                                               /   \
                                              V     DP
                                              E
```

She argues that temporal interpretation across sentences in discourse is subject to the same principles as temporal interpretation within sentences. This approach makes possible an analysis of the temporal adverb *then*. In order to explain how the meaning of *then* differs depending on its position, she claims that *then* associates different times in tense structure depending on its syntactic position, resulting in different interpretations; that is, she assumes that *then* is an overt marker of time linking.

The analysis goes as follows. Adverbs may be adjoined either to VP or to AspP. In the case of *then*, for example, it is considered to be adjoined to VP when it appears in clause-final position (as in (4) above). Assuming that *then* is an overt marker of time linking amounts to saying that *then* links the Event time of its clause with the Event time of the previous clause, resulting in a cotemporal reading[1]:

$$(5) \quad S \_ R , E$$
$$\quad \quad \mid \quad \quad \mid$$
$$\quad \quad S \_ R , E$$

The interpretation obtained for *then* in clause-medial position is the ordered reading. Assuming that medial *then* is adjoined to AspP and that AspP is associated to the Reference time, medial *then* links the Reference time of its clause to the Reference time of the previous clause, as shown below:

$$(6) \quad S \_ R , E$$
$$\quad \quad \mid \quad \mid$$
$$\quad \quad S \_ R , E$$

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[1] Thompson assumes, following Nunes (1994), that the sentences of a discourse sequence have identical deictic reference for their Speech times. She proposes that "this identification is realized by the linking of the Speech times of the sentences; in this way, the sentences of the discourse are strung together as a unit temporally."

Since the Event times in (6), contrary to the structure in (5), are not linked, they are interpreted as noncotemporal, and the ordered reading results. The same goes for clause-initial *then,* since it is assumed to have moved from AspP.

3. Tests

Two tests were devised. In order to check whether the cotemporal interpretation of *then* in clause-final position was achieved by BP students, a short-story test was designed, which was followed by a comprehension question. Based on the differences English and Portuguese present for the order between verb and adverb, a task of ordering words in a sentence was proposed. It consisted of 5 sentences, 2 of which tested the order between verb and adverb for finite verb and modal verb respectively. The tests follow in the Appendix. In order to not unduly tax the students, the tests were graded. Thus, vocabulary and grammatical complexity were kept as simple as possibly, especially for Beginners. For this level, instructions were kept in Portuguese as well.

3.1 Subjects

A total of 202 BP students of English as FL were tested, divided into three groups: 72 beginners (about 2 semesters of regular classes), 64 intermediate level students, and 66 advanced students.

3.2 Results
3.2.1 Cotemporal reading

Figure I shows the percentage of cotemporal interpretation for *then*, based on the short-story comprehension question:
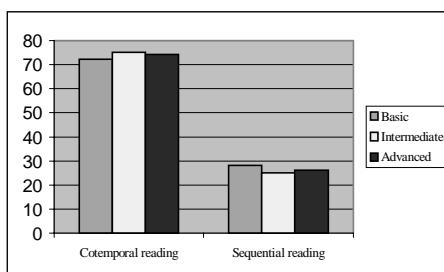

Figure I: Cotemporal reading of events

The above graphic shows that cotemporal reading of *then* is achieved, contrary to what I had been assuming based on the fact that such an interpretation is very rare in BP. It is worth noting though that such an interpretation is more frequent for older subjects – those above 20 years of age:
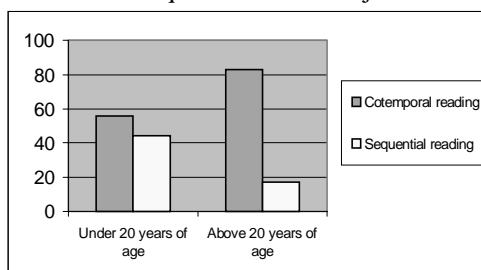

Figure II: Cotemporal reading by age

Among the 17% of subjects above 20 years of age who failed to give a cotemporal interpretation for *then* in clause-final position, 68% of these were under 25 years of age; that is, a cotemporal reading seems to be more difficult to obtain for younger subjects, which may be credited to the fact that in BP this kind of interpretation is becoming obsolete.

3.2.2 Adverb placement
3.2.2.1 Finite main verbs

As mentioned earlier in the paper, English and Portuguese differ in relation to the order verbs and adverbs show. Portuguese moves the verb to the head of TP. Taking into consideration that the adverb *então/then* is joined to AspP, a node beneath TP, we expect to obtain the order V-*então*. No movement of the verb is assumed for English, thus the resulting order for this language is expected to be *then*-V.

Depending on the view of transfer one assumes, a certain amount of it is going to be expected. This transfer, though, may decrease as fluency in the target language increases. However, the experiment conducted here for FL acquisition does not support such a relationship between transfer and fluency.
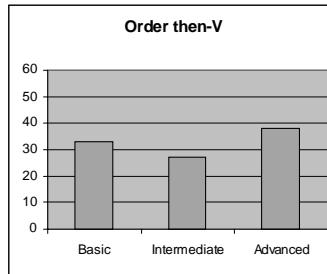

Figure III: Order *then*-V

Although Figure III shows a slightly higher percentage of correct answers for Advanced students, Figure IV below presents the whole set of orderings encountered[2]. A clear preference for the ordering of *then* as a post-verbal element is evident for any level considered:
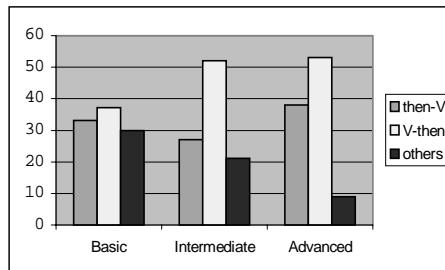

Figure IV: Orderings

3.2.2.2 Modal verbs

When one comes to auxiliary/modal verbs, the order between the verb and the temporal adverb *então/then* is the same for English and Portuguese, since English auxiliaries/modals appear in TP too:
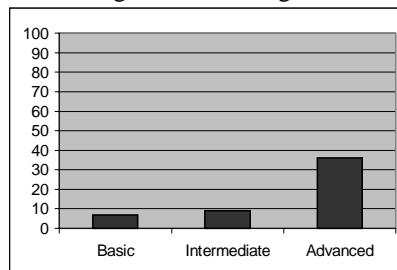

Figure V: Modal-then-V ordering

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[2] The ordering defined as others under column 3 refers to the following sequence:
   (i) She bought a present **then** for John.

Although Figure V shows a gradual increase of correct answers according to the level of fluency, the figures are nevertheless very low. Even in this context, a preference for positioning the temporal adverb after the main verb is favored.
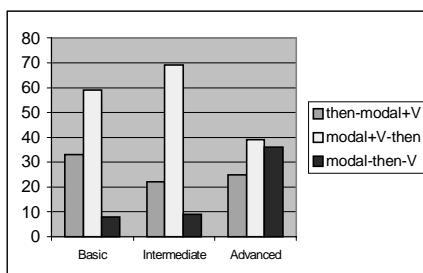

Figure VI: Orderings

4. Discussion

The data shown above may be viewed as evidence in favor of some models of L2 acquisition in which transfer is considered for determining the L2 initial state. Let us consider Minimal Trees (Vainikka & Young-Scholten 1994, 1996), and Full Transfer/Full Access (Schwartz & Sprouse, 1996). The first model relies on the distinction between lexical and functional projections. It is assumed that what transfers from L1 grammar in L2 acquisition is restricted to lexical categories and their linear orientation. There are no functional projections in the L2 initial state. In sum, a very restricted notion of transfer is under consideration. On the other hand, Schwartz & Sprouse (1996) assume an extensive L1 influence in L2 acquisition. For them, the initial state of L2 acquisition is the final state of L1 acquisition.

Our data suggest that Minimal Trees is not able to accommodate such results. Figure IV, for example, shows that both orders below are generated by the students:

(7) She bought **then** a present for John.
(8) She **then** bought a present for John.

Minimal Trees doesn't allow such optionality. For Portuguese/English interlanguage, the order effectively presented in English input should be respected. Considering that the initial state would be based on the category VP, and that the adverb would be generated at the left-periphery of VP, the order expected is Adv-V. Under the Minimal Trees Model, by hypothesis, there are no functional projections in the initial state. That amounts to saying that there is no higher position for the verb to move to. If the verb stays in V, the only derived order possible is adverb-V, contrary to what we obtained in the experiment. Thus, the high percentage of the preference for the order V-*then*, even for the initial state, as Graphic IV shows, is counter-evidence to the assumption that only lexical architecture transfers in this process. Transfer of at least some functional projection is apparently required to explain the data. The preference for post-verbal ordering of *then* corroborates the hypothesis assumed by the Full Transfer/Full Access Model. If we admit that it is the final state of L1 acquisition which defines the initial state of L2 acquisition, as this model argues, we explain why the post-verbal order is preferred, since in Portuguese the verb moves to T° and the V-*then* order would be derived. In L2 acquisition, however, the stages of Interlanguage – this mixture of native language structure and target language lexicon – lead to acquiring a grammar which is gradually closer to the target language grammar. In the investigation currently presented, no progressive performance was in evidence.

4.1 Some other adverbs

Some further remarks are in order, though. When we compare the previous results for *then* to the ones obtained for adverbs like *always* and *rarely* – which appeared in control sentences – the figures are quite distinct:
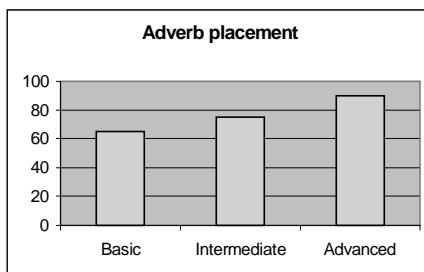
Figure VII: Adverbs: *always*/*rarely*

For these adverbs, a progressive performance is noticed. A greater amount of transfer may be said to be detected at the initial state, corroborating the Full Transfer/Full Access Model, but at higher levels of fluency students seem to be able to restructure the grammar with verb movement and exhibit a structural pattern which is closer to the grammar of the target language. Some explanation is called for. In the next section, we turn to some speculations regarding what differentiates *then* from the other adverbs.

5. The influence of *então* as a discourse marker

Several researchers (Oliveira 1995, Risso 1996, Risso, Silva & Urbano 1996) have pointed out that in BP, *então* (*then*) has been assuming the role of a discourse marker (similarly to "*aí*"/"there"), for which the ordered interpretation stands out. At the same time, it has been noticed (Augusto 2001) that the cotemporal interpretation does not seem to be frequently encountered in BP anymore.

Some BP data is worth considering. Sentences like (9) below are very frequently used in BP (from NURC – SP-360):

(9) O menino então geralmente ele vai [para o campo de futebol] com o tio.
     The boy then usually he goes to the soccer field with his uncle.

Apparently *então* is placed after the subject of the sentence, but recent studies have shown that the subject of the sentence in this case is the pronoun - *ele* - and not the nominal - *os meninos*. This kind of sentence – usually called "double subject sentence" – is becoming very common in BP. Much comparative research has come to the consensus that some NPs in BP appear in a position above IP (see Soriano (1989), Martins (1994), Kato (1998) and Britto (1998); Galves (1993) postulates a different category for the nominal), establishing a semantic relation to the whole sentence. The point here is that (9) shows that *então* is adjoined to IP. Thus *então* is ambiguous between the temporal adverb reading and the discourse marker reading. In its latter function, it may occupy different positions in a sentence.

This is thus a kind of data that extends our earlier claim: we hypothesize that the frequent use of *então* as a discourse marker in BP may contribute not only to the failure in the younger generation to interpret *then* as a cotemporal element, but may also raise difficulties for the interpretation of *then* as an adverb. Analyzed as a discourse marker, a greater range of possible positions for the element becomes available. This seems to explain the following kind of data produced by subjects (see Figure IV):

(10) She bought a present **then** for John.

6. Final remarks

The experiment conducted provided evidence not only to confirm or disconfirm the acquisition models under consideration – Full Transfer/Full Access versus Minimal Trees – but was extremely valuable in pointing out that some patterns of acquisition are quite specific, and are not necessarily true of one entire class. In the case under investigation, we saw that *then* does not exhibit a behavior

similar to the one showed by some other, more common adverbs, such as *always* and *rarely* for example.

We have tried to shed some light on the nature of the transfer responsible for such variation of behavior. In order to conclude, we want to point out two kinds of consideration. First, as mentioned earlier, we may consider that *then* is not easily analyzed as a temporal adverb by BP students, due to the fact that the equivalent form in Portuguese – *então* – frequently functions as a discourse marker in this language.

Secondly, it is of interest here to consider whether a difference is to be posited between L2 and FL acquisition. It is questionable if FL learners are able to **delearn** some aspects of their native grammar and incorporate rather opposing features of the target language. The presence of an interlanguage, structurally much closer to the native language than to the target language, seems to be the most common case. If so, we are led to conclude that FL teaching must bear in mind that peculiar characteristics of both languages must be taken into consideration and the explicit comparison of them is what may lead to development in direction of the target language grammar. Notice, however, that if this were the explanation for the improved results obtained for *always* and *rarely* in opposition to *then*, we should expect that the first two would be more frequently encountered in the input received by the FL students, which may be true, although I do not have statistical evidence for saying so. Although statistical investigation and more experimental evidence are needed, these results are very suggestive nonetheless.

Appendix

A sample of the tests are given below:

Intermediate
I. We know the following facts about Mary and John: (a)   She is a famous actress. (b)   He is a photographer from Washington Post. (c)   This morning, she spoke to the reporters at home (d)   Later she went to the film set. The next sentence tells us something else about Mary and John: Mary spoke to the reporters and John photographed her then. Answer: John photographed Mary: (   ) at home.   (   ) at the film set.
II. We know the following facts about Tom and Mary: (a)   Tom and Mary are neighbors. (b)   The last time he saw her was when Bob was teaching her how to drive. (c)   A few days afterwards she had suddenly become ill. The next sentence tells us something else about Tom and Mary: Tom was very surprised when he met Mary at the party. Answer: Tom was surprised because he thought: (   ) Mary was sick.   (   ) Bob would not let her go.
III. Read the following text: From January to December last year, 291 people were killed in road accidents on the city's roads. (a)   157 of all the fatal accidents involved motor-cyclists or their pillion passengers. (b)   95 involved pedestrians (c)   the remaining 39 involved the drivers and passengers of motor vehicles. Answer: Over half of all the people killed in road accidents last year were: (   ) motor-cyclists and pillion passengers   (   ) pedestrians (   ) drivers of buses, cars and lorries.

Intermediate

Write sentences using the following words. Some words have already been inserted in the right places:

1) Europe Jim been in month have a Tammy for and .

2) Mary bank to went the . then present bought she a John for .

She			
for	John		

3) There   yesterday many there students were .

yesterday		

4) Susan movies loves . goes cinema she weekends to on the the always .

		She	
weekends.			

5) Mary will school Friday go on to . buy she then will present a .

	She		
	present		

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